Report by the Railway Bd.
on
Indian Railways
for
1928-29 & 1929-30
(Vols. I & II)

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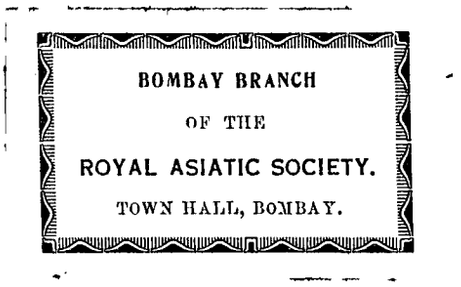

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(2) Classified List and Distribution Return of Officers of all Indian Railways. Published half-yearly. Price Re. 1.

(3) History of Indian Railways, constructed and in progress corrected up to 31st March 1928. Published quinquennially. Price Rs. 5-8-0 or 9*s*.

(4) History of Services of the Officers of the Engineer and Superior Revenue Establishment of State Railways. Published yearly. Price Rs. 2-8-0.

(5) Pocket edition of the schedule of dimensions to be observed on 5′ 6″ and 3′ 3⅜″ and 2′ 6″ gauge railways in India, 1922, Rs. 1-8-0 for the 5′ 6″ and 3′ 3⅜″ gauge edition and Re. 1-0-0 for the 2′ 6″ gauge edition.

(6) Preliminary Abstract of Statistics of Indian Railways. Published yearly. Price Rs. 1-4-0 or 2*s*.

(7) Railway Statistics—Class I Indian Railways. Published monthly. Price Rs. 1-6-0 or 2*s*. 2*d*.

TECHNICAL PAPERS.

(8) Over 250 papers have been published by the Technical Section of the Railway Board's office. The papers comprise:—

(*a*) Original descriptions of railway works and studies of railway problems in India and elsewhere.

(*b*) Reprints of articles from foreign engineering magazines.

(*c*) Reprints or abstracts of reports received by the Government of India on subjects connected with railways.

A complete list of the papers can be obtained *gratis* from the Secretary, Railway Board. A few of the more important Technical papers are mentioned below:—

Technical Paper.	*Name.*	*Author.*
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GOVERNMENT OF INDIA

RAILWAY DEPARTMENT

(RAILWAY BOARD)

REPORT

BY THE

RAILWAY BOARD

ON

INDIAN RAILWAYS

FOR

1928-29

Volume I

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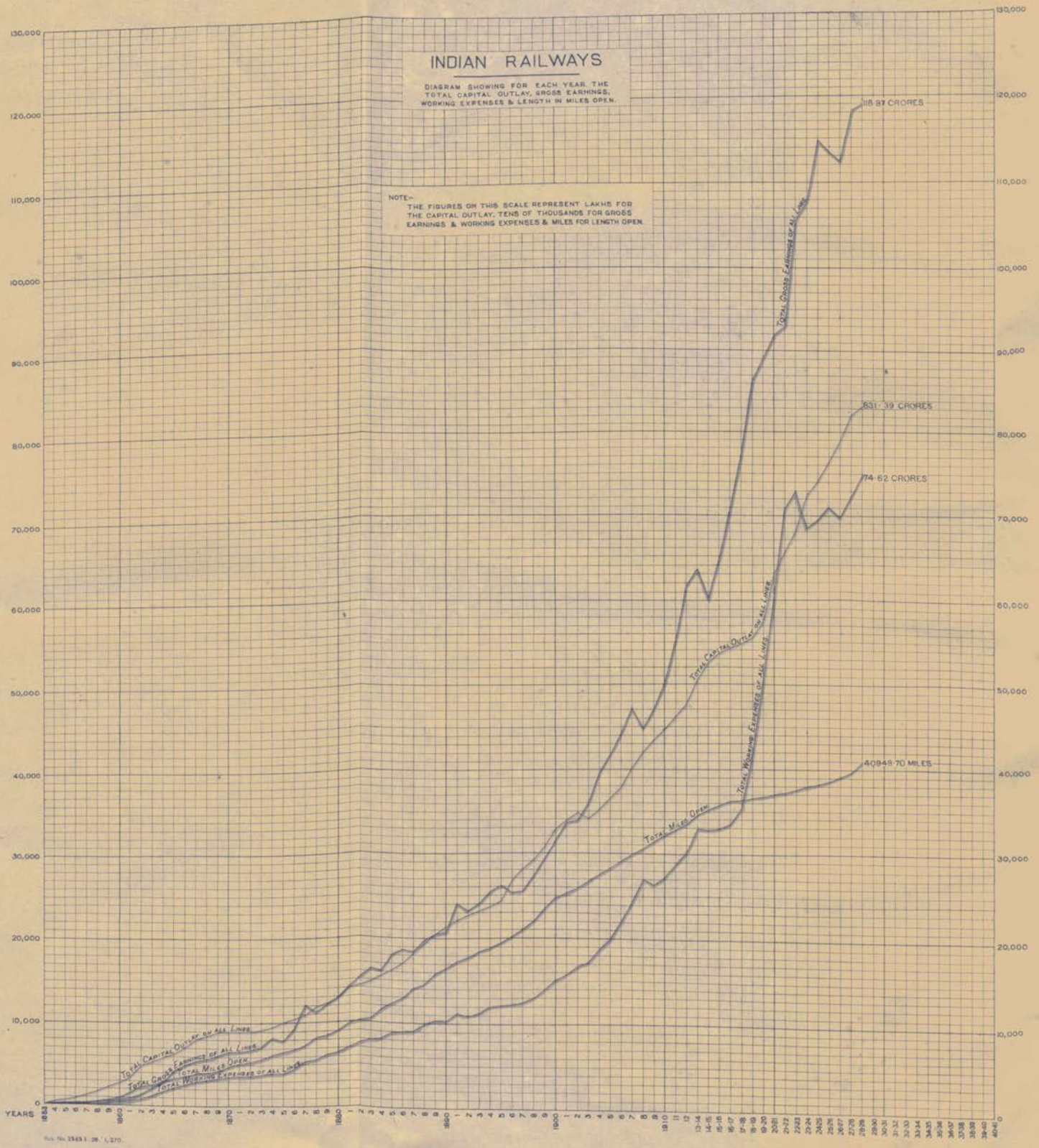

INDIAN RAILWAYS
DIAGRAM SHOWING FOR EACH YEAR THE TOTAL CAPITAL OUTLAY, GROSS EARNINGS, WORKING EXPENSES & LENGTH IN MILES OPEN.
NOTE:- THE FIGURES ON THIS SCALE REPRESENT LAKHS FOR THE CAPITAL OUTLAY, TENS OF THOUSANDS FOR GROSS EARNINGS & WORKING EXPENSES & MILES FOR LENGTH OPEN.
118·87 CRORES
83·39 CRORES
74·62 CRORES
40949·70 MILES
TOTAL GROSS EARNINGS OF ALL LINES
TOTAL CAPITAL OUTLAY ON ALL LINES
TOTAL WORKING EXPENSES OF ALL LINES
TOTAL MILES OPEN
TOTAL CAPITAL OUTLAY ON ALL LINES
TOTAL GROSS EARNINGS OF ALL LINES
TOTAL MILES OPEN
TOTAL WORKING EXPENSES OF ALL LINES
YEARS

Passengers from the Ferry Steamer from Ceylon changing into the Madras Boat Mail at Dhanushkodi Pier.

CHAPTER I.

GENERAL ADMINISTRATION.

1. General Review.—This report deals with the results of the working of Indian Railways in the financial year 1928-29 and with the events of that year as affecting those railways. The monsoon of 1928 was characterised by a marked deficiency of rainfall in north-west India, including the United Provinces, where persistently dry weather prevailed for a considerable period. The rainfall was also slightly defective in Central India, the Central Provinces, Mysore, and Madras and normal or slightly above normal elsewhere. During the closing stages of the monsoon, exceptionally heavy rain occurred at the beginning along the east coast of Madras resulting in floods; and the rainfall during this period was in large excess over the whole of Northern and Central India and normal or slightly above normal in the Peninsula. Taking the year as a whole, the rainfall was within 25 per cent. of the normal, except in Sind where it was very defective.

2. The gross revenue receipts of State-owned railways were practically the same as in the previous year, *viz.*, 104 crores, but the net receipts were less by 1·4 crores; being 37·5 crores against 38·9 crores in the previous year.

3. The number of passengers carried on all railways fell by 3 millions, but the aggregate distance travelled by passengers increased by 392 million miles indicating that the average distance travelled by each passenger was greater than in the previous year. This may be attributed to the incentive to travel afforded by the reduction in the charge per passenger per mile, which, on an average for all classes together, fell from 3·47 pies to 3·32 pies and for 3rd class from 3·25 to 3·10 pies. The increase in the aggregate distance travelled did not, however, counterbalance the loss in earnings consequent on a lesser number of passengers being carried: the earnings falling from 39·18 crores in the previous year to 38·24 in 1928-29.

4. Goods traffic showed a slight improvement: the total tonnage carried having increased from 89·8 million tons in the previous year to 90·8 million tons in 1928-29. The average yield per ton per mile for all commodities together also increased from 6·08 pies to 6·24 pies, which, in spite of a decrease of 13 millions in the ton miles, helped to raise the earnings on goods traffic to 71·15 crores as against 69·40 crores in the previous year.

5. The new mileage opened during the year was 1,282, but the net addition amounted to 1,238 miles, out of which 970 miles were State-owned. The total route mileage at the end of the year was 40,950. In addition there were 2,896 miles under construction on 31st March, 1929, of which 653 miles had been sanctioned during the year.

6. Among the more important happenings of the year, which are referred to in greater detail elsewhere, are the taking over by the State of the Burma Railways from the 1st January 1929, and the opening of the Kazipet-Balharshah section of His Exalted Highness the Nizam's Guaranteed State Railways. The latter provides a more direct broad gauge route between Northern and Southern India, reducing to 1,361 miles the distance from Delhi to Madras as compared with 1,569 miles by the Manmad-Raichur route.

7. Railways and Legislature.—Judging by the number of interpellations in the Legislative Assembly and the Council of State, members of the Legislature continue to evince considerably more interest in the work of the Railway Department than of any other Department of the Government of India. Of the 3,831 questions asked in the two Houses during 1928-29, 1,223, *i.e.*, 32 per cent. of the total, referred to railways.

Most of the questions asked had reference to personal grievances of railway employees, their conditions of service, discrimination in recruitment,

the provision of amenities for the travelling public and the construction of new lines. Apart from questions, notice was given of 19 resolutions on railway subjects which members desired to move during the Simla Session (September 1928), and of 38 resolutions for the Delhi Session (January-April 1929). Only three resolutions relating to railway matters, however, found a place as a result of the ballot under the rules of the Legislature and, therefore, came up for discussion. These were :—

(*i*) *Establishment of Steamer Services in conjunction with State Railways.*—This resolution, which was moved in the Council of State on the 13th February 1929, recommended the establishment of steamer services in conjunction with the State Railway system wherever feasible. Government could not agree to this resolution, as the establishment of steamer services was opposed both to the letter and the spirit of the law relating to railways and the intention and policy underlying that law and, also, because it was not desirable in the public interest for railways to extend their monopoly over waterways, thus discouraging and killing private enterprise in this direction. The resolution was negatived.

(*ii*) *Return tickets for third class passengers.*—This resolution, which was moved in the Council of State on the 18th February 1929, recommended that steps be taken for the issue of ordinary and 8-monthly return tickets at reduced rates to third class passengers on all state railways. Government opposed the resolution on account of its financial implications, as to give effect to it would, it was estimated, result in a loss of Rs. 250 lakhs a year, assuming that there was no increase in traffic. The resolution was withdrawn.

(*iii*) *Re-construction of the Central Advisory Council for railways.*—This resolution, which was moved in the Council of State on the 27th February 1929, recommended the re-constitution of the Central Advisory Council for railways so as to give complete effect to the recommendations of the Acworth Committee and to enable the Council to co-ordinate its activities with those of Local Advisory Committees on railways and to guide their policy generally. Government opposed this resolution on the grounds that the present constitution of the Council had been determined by the convention for the separation of railway from general finance, and the Committee which was considering the renewal of this convention would doubtless also consider any modifications in the constitution of the Council. The motion was withdrawn.

8. Railway Budget.—The Railway Budget for 1929-30 was placed before both Houses of the Legislature on the 19th February 1929. A general discussion on various subjects relating to railway working, based on figures appearing in the budget, took place in the Assembly on the 21st February and in the Council of State on the following day. The demands for grants were voted on from the 25th to 28th February 1929.

The outstanding feature of the budget debates was the criticism against the proposal for the appointment of a fifth member of the Railway Board, the motion for reducing the demand for a grant on this account being finally negatived by a majority of 10. Other matters of importance, against which criticism was directed, were the alleged failure of railways to meet the requirements of third class passengers, racial discrimination, both in the services and in the treatment of passengers, recruitment and training of staff and the policy regarding the purchase and use of steel sleepers. All motions for reductions were, however, negatived, and the entire demands for grants in the Railway Budget were voted by the Assembly.

9. Standing Finance Committee for Railways.—The Committee met 14 times in 1928-29 and besides scrutinising the capital programmes of railways and discussing the budget proposals for 1929-30, they examined the proposals for construction of 13 projects of new railways, costing an aggregate sum of 7 crores of rupees, and also for the transfer of ownership to the Government of India, on certain agreed terms, of two district board railways in South India, *viz.*, the Salem Suramangalam Railway and the Tanjore District Board Railway. They also considered various proposals pertaining to railway staff, including the revision of cadres, re-organisation of certain departments and the creation of a number of superior appointments on Indian railways. They devoted considerable attention to the proposal to adopt as a permanent measure the system of separation of Accounts from Audit on Indian railways and the rules for the recruitment of candidates for establishments under the Financial Commissioner of Railways and to the scrutiny of the recommendations contained in Sir Arthur Dickinson's report on traffic, stores and workshop accounting.

10. Central Advisory Council for Railways.—During the year 1928-29, two meetings of the Central Advisory Council were held, one during the September Session and the other during the February—March Session.

The subjects discussed were:—

(*i*) Improvement in the standard of comfort of passengers, and

(*ii*) Assistance from railway funds to railway employees for the education of their children.

In regard to (*i*) the questions of overcrowding, dirty latrines, supply of drinking water, lack of waiting sheds, high level platforms, lack of benches, confusion and overcrowding at booking office windows and difficulty in purchasing tickets were examined. Various suggestions were made, some of which were accepted, and which will be brought to the notice of the Railway Administrations.

The future policy of the Railway Board in regard to Railway schools and the education of the children of railway employees was explained. It was pointed out that railway officers had not the experience or the training to administer and control educational institutions. It was, therefore, considered desirable that railway schools should be handed over to Provincial Governments or other authorities, who should be asked to provide educational facilities for the children of railway employees. The Memorandum outlining the policy was discussed and among the points touched upon, were the pay and prospects of teachers and the ownership of the railway buildings on the transfer of railway educational institutions to Local Governments.

11. Termination of the Contract with the Burma Railways Company.—Mention was made in last year's report of the impending termination of the contract with the Burma Railways Company. The contract was terminated on the 31st December 1928, after which the management of the Burma Railways was taken over by the State. The line now forms a part of the state-managed railway systems of India, to which it has added a length of about 2,000 miles of metre gauge railway. The purchase of this railway has entailed the payment to the Burma Railways Company of the sum of three millions sterling, being the share capital originally contributed by the company. The financial result of taking over the line is estimated to be an increase of about half a crore of rupees in the net annual revenue to Government.

12. Purchase of the Southern Punjab Railway.—This railway, which runs from Delhi to Samasata, from Ludhiana to McLeodganj, from Jullundur to Ferozepur and from Kasur to Lodhran, with a few short branches—an aggregate length of about 927 miles—is the property of the Southern Punjab Railway Company. It is worked by the North Western Railway on behalf of the proprietors. The earliest date on which the line could, under the contract with the company, be purchased by the Government is 31st December

1929, by giving not less than 12 months' previous notice to the company. After careful consideration of the question in all its aspects the Government of India came to the conclusion that the purchase of this line on the 31st December 1929 was desirable on administrative and financial grounds, and they accordingly recommended to the Secretary of State that the property be acquired on that date. This recommendation has been accepted by the Secretary of State and he has given the necessary notice to the Southern Punjab Railway Company. It is estimated that the financial result of the purchase, which is likely to cost approximately Rs. 703 lakhs, will be a gain to Government of about Rs. 47 lakhs a year.

13. Separation of Railway Accounts from Audit.—The Acworth Committee recommended that the Railway Department should be responsible for its own accounts. In 1925, the system of separation of accounts from audit was started as an experimental measure on the East Indian Railway in accordance with a resolution passed by the Legislative Assembly which runs as follows :—

" That this Assembly recommends to the Governor-General in Council that, with a view to improving the system of audit and accounting on railways, a re-organisation in the direction stated below be introduced forthwith as an experimental measure on the East Indian Railway :—

(*a*) " The Auditor General shall, in future, be responsible for audit alone. He should no longer be required to maintain the accounts of the railways or to control their accounts staff. Such control should pass, not to the Railway Board as such, but to the Financial Commissioner of Railways. On each railway system for all ordinary purposes, the head of the accounting staff should be answerable to the Agent and should carry out his orders.

(*b*) " The accounts staff under the Financial Commissioner of Railways shall perform duties practically identical with those hitherto undertaken on state-managed railways by the accounts and audit staff under the Auditor General. Where the latter exercises an audit properly so called, the new agency will conduct an internal check; but the nature and extent of the scrutiny will be approximately the same in both cases.

(*c*) " The Auditor General shall, in order to enable him to fulfil his statutory responsibilities, be provided with a sufficient staff to make a satisfactory audit of the work of the accounts offices."

The experiment proved a success. The advantages claimed for the revised system are as follows :—

(*a*) The earlier preparation of such accounts and returns as are required by the Executive and Administration for the control of expenditure against estimates and grants;

(*b*) The prevention of irregular expenditure;

(*c*) The speedy removal of expenditure held under objection on technical considerations;

(*d*) The introduction of revised systems of accounting and detailed methods of procedure, more in accordance with commercial practice in the Administrative, Executive and Accounts offices which are directed to secure greater efficiency and to reduce establishment costs;

(*e*) Greater attention by all concerned, but specially by the Accounts Department, to the internal economy of the railway. This would cover all proposals for reducing working costs in wages, materials and sundry charges, for reduction of stores balances and for the prevention of losses;

(*f*) The creation of an audit organisation absolutely independent of the administration.

Covered way carried on Viaduct at Chamartola.

During the year under review the question of adopting the revised system as a permanent measure on all state-managed railways in India was considered and, with the concurrence of the Legislative Assembly and the sanction of the Secretary of State for India, the new system was introduced on the Burma Railways with effect from 1st January 1929, and on the North Western Railway with effect from 1st April 1929. It is proposed to extend it to the Great Indian Peninsula Railway with effect from 1st October 1929 and to the Eastern Bengal Railway with effect from 1st April 1930.

14. Clearing Accounts Office.—Mention was made in the last year's report that the Board of Directors of the Bombay, Baroda and Central India Railway had agreed to the transfer of work relating to the check and apportionment of their foreign traffic to the Clearing Accounts Office. This transfer of their foreign traffic work took place with effect from the accounts for September 1928. Thus the work relating to the check and apportionment of foreign traffic of five railways, namely the North Western, East Indian, Eastern Bengal, Great Indian Peninsula and Bombay, Baroda and Central India, is done at present in the Clearing Accounts Office, in addition to the work in connection with the check, apportionment and recovery of earnings from Government (Military) traffic, consisting of Government (Military) passengers, soldiers' baggage and horse, carriage and dog, etc., traffic, both local and foreign, of the four state-managed railways.

Owing to the necessity of giving the Clearing Accounts Office time to consolidate the results so far obtained and also to revise the procedure under which it is working in the light of experience gained, the opening of a branch Clearing Accounts Office at Madras to deal with the foreign traffic work of the southern railways, which was anticipated in the last year's report has been temporarily postponed.

15. Transfer of ownership of Salem Suramangalam and Tanjore District Board Railways to the Government of India.—During the year under review arrangements were made for the transfer to the Government of India of the ownership of certain railways in the Madras Presidency, which were originally constructed by district boards out of funds raised by them by the levy of a special railway cess. The question of the acquisition of the district board railways in Madras first arose in connection with the programme of new construction in South India, which involved the conversion of most of these railways into lines of through communication; and negotiations with the district boards in this behalf were in progress since 1925. It was recognised that the railways in Southern India were under an obligation to these district boards for raising substantial sums for the development of railway communications, and the Government of India realised that the district boards were entitled to a sound investment for these sums. Special terms were, therefore, offered to the district boards, under which the capital sunk by them in the lines in question would be merged in the South Indian Railway undertaking and would rank equally with the Secretary of State's capital and the South Indian Railway Company's ordinary capital for the purpose of dividends; that is to say, the annual return received by the district boards on their capital would be at the same rate as the annual return which the South Indian Railway Company received on its ordinary capital. In the case of the Salem Suramangalam Railway, which was earning considerably higher dividends than the South Indian Railway, it was also stipulated, in order to protect the Salem district board from loss, that the capital to be brought into the accounts of the South Indian Railway as the capital of the district board would be an amount representing the capital expenditure on the line increased to such an extent as to give the district board the same return on their capital as they obtained in the last year before the transfer of ownership. These terms have recently been accepted by the district boards of Salem and Tanjore, and accordingly the ownership of the Salem Suramangalam Railway, a length of 3·86 miles only, and the Tanjore District Board Railway, about 131 miles, has, with the concurrence of the Standing Finance

Committee for Railways, been transferred to the Government of India with effect from the 1st April 1928 and the 1st April 1929 respectively.

16. Meetings with Agents and Local Governments.—The periodical meetings of the Railway Board with the Agents of the principal railways for an informal discussion on important matters of general interest were held in October 1928 at Simla and in March 1929 in New Delhi. In addition to matters of technical importance the following subjects were discussed at these meetings:—

(*i*) Improvements in the standard of comfort for passengers;
(*ii*) Assistance from railway funds to railway employees for the education of their children;
(*iii*) Procedure to be followed before dismissing an accused railway employee;
(*iv*) Staff councils;
(*v*) Application of the Washington and Geneva conventions to railways;
(*vi*) The Trade Disputes Bill;
(*vii*) Railway Labour Unions;
(*viii*) Road motor competition; and
(*ix*) Lorry services as subsidiary to railways.

The Chief Commissioner, the Financial Commissioner or a Member of the Board visited the headquarters of Railway Administrations on thirty-two occasions and discussed with the local Government concerned at their headquarters on ten occasions matters of special importance requiring personal discussion. Copies of the tour programmes of the Hon'ble Member for Railways, the Chief Commissioner, the Financial Commissioner and Members of the Railway Board are generally sent in advance to local Governments and important mercantile associations, besides being communicated to the press.

17. Local Advisory Committees.—These Committees constitute a valuable link between railway administrations and the travelling public, affording, as they do, opportunities for discussion on matters of interest and importance to the general public. 115 meetings of these committees on state-owned railways were held during the year, as compared with 108 in the previous year and 92 in 1926-27. The number of meetings held at each centre during the year was as follows:—

Assam Bengal Railway	3
Bengal Nagpur Railway—	
Calcutta (Bengal)	12
Patna (Bihar and Orissa)	3
Nagpur (Central Provinces)	3
Bengal and North-Western Railway—	
Gorakhpur (United Provinces)	3
Muzaffarpur (Bihar and Orissa)	4
Bombay, Baroda and Central India Railway	10
Burma Railways	4
Eastern Bengal Railway	8
East Indian Railway—	
Calcutta (Bengal)	10
Cawnpore and Lucknow alternatively (United Provinces)	6
Great Indian Peninsula Railway—	
Bombay	11
Nagpur (Central Provinces)	3
Cawnpore (United Provinces)	2

Madras and Southern Mahratta Railway—	
Madras	7
Hubli (Deccan and Southern Mahratta)	4
North Western Railway—	
Lahore (Punjab)	12
Karachi (Sindh)	4
Rohilkund and Kumaon Railway	2
South Indian Railway	4

The subjects discussed at these meetings cover a wide range of topics and, to the list given in last year's report of matters that were discussed, may be added the following:—

Extension of through train services and through carriages.
Acceleration of train services.
Running of steam coach services.
Running of demonstration trains.
Running of Indian refreshment cars.
Disinfection of passenger carriages.
Alarm chains in suburban trains.
Provision of additional fittings in lavatories of 3rd class carriages.
Inconvenience caused to passengers by hawkers and pedlars travelling in trains.
Reservation of accommodation.
Supply of water to passengers in carriages.
Issue of return tickets for week-ends.
Concessions in fares for holidays.
Arrangements for booking of luggage.
Porterage charges at stations.
Opening of city booking offices.
Provision of electric fans in waiting halls for inter class passengers.
Building of high level platforms.
Provision of additional benches on station platforms and in waiting halls.
Provision of first aid equipment at important stations.
Refreshment rooms for Indians.
Provision of level crossings and overbridges.

The public appreciation of the utility of these Advisory Committees is reflected in the demands that are made for the constitution of Branch Advisory Committees at other centres in addition to those constituted at the headquarters of railway administrations. Two such branch committees were formed during the year one by the Great Indian Peninsula Railway at Cawnpore and the other by the Madras and Southern Mahratta Railway at Hubli.

18. Railway Rates Advisory Committee.—The Railway Rates Advisory Committee, which was constituted in 1926, and was mentioned in last year's report, continued to function during the year under review when the Committee reported on the following nine cases that had been referred to them:—

(*i*) Complaint of undue preference from two firms dealing in myrabolams against the Bengal Nagpur Railway in regard to the quotation of a lower rate for myrabolams from Seoni to Kidderpore Docks, as compared with the

rates from other stations, the distances from which to Kidderpore Docks are less.

(*ii*) Complaint from certain cotton mill-owners in Calcutta against the North Western and East Indian Railways in connection with the rates for cotton from North Western Railway stations to Howrah, which, it is alleged, were unreasonable *per se*.

(*iii*) Complaint from certain cotton mill-owners in Calcutta [the same parties as were concerned in item (*ii*) above] against the Great Indian Peninsula and Bengal Nagpur Railways, in regard to the rates for cotton from stations in the Central Provinces to Shalimar, which were alleged to be unreasonable *per se*.

(*iv*) Complaint from the Bhannilal Glass Works against the Bombay, Baroda and Central India, Great Indian Peninsula and East Indian Railways in regard to the enhancement in the rates for raw materials used in the manufacture of glass, consequent on the transfer of the administrative control of the Jubbulpore-Naini section from the East Indian to the Great Indian Peninsula Railway.

(*v*) Complaint from the Bhannilal Glass Works against nine railways in regard to the rates for glass bangles from Firozabad, which were alleged to be so high as to preclude the works from competing effectively against imported bangles.

(*vi*) Complaint from certain cloth merchants at Delhi and cotton mill-owners at Sholapur against the Great Indian Peninsula Railway in regard to the rate for piecegoods from Sholapur to Delhi, which, it is alleged, was unreasonable, because it was higher than the rate from Bombay to Delhi (a shorter distance).

(*vii*) Complaint from certain cloth merchants of Amritsar and cotton mill-owners at Sholapur against the Great Indian Peninsula in regard to the Great Indian Peninsula Railway's proportion of the rate for piecegoods from Sholapur to Amritsar, which was alleged to be unreasonable, because of the Great Indian Peninsula Railway's proportion of the rate from Bombay to Amritsar (a shorter distance) being less.

(*viii*) Complaint from the Alembic Chemical Works Company, Limited, Baroda, against six of the principal railways in regard to the rates for industrial alcohol, country spirits, rectified spirits and locally manufactured medicines, which were alleged to be unreasonable *per se*.

(*ix*) Complaint from Messrs. Shambhu Nath & Sons, Amritsar, against the North Western Railway, alleging that the rate for sulphur from Karachi to Cawnpore constituted undue preference in view of its being on a lower mileage basis than the rate applicable for traffic from Karachi to Cawnpore.

The Committee's reports in the first eight cases, seven of which were received late in the year, were, under consideration by the Government of India at the close of the year. In case (*ix*) the Committee's recommendation was to the effect that, as no traffic was being booked from Karachi to Cawnpore, the special rate quoted was in-operative and should, therefore, be deleted from the Railway's tariffs. This recommendation was accepted. At the close of the year the Committee had under consideration three cases, *viz.*:—

(*i*) against the Assam Bengal Railway in regard to the terminal charges for jute;

(*ii*) against the Great Indian Peninsula, Madras and Southern Mahratta and South Indian Railways, as regards the rates for marble;

(*iii*) against the Great Indian Peninsula and Bengal Nagpur Railways, in regard to the rates for pieeegoods.

19. Standardization Committees.—In pursuance of the Railway Board's policy of progressive standardization, to which a reference was

Tea Lounge at the new main line station at Victoria Terminus.

made in the previous year's reports, the various Standardization Committees continued to function during the year under review. A brief account of their activities is given below:—

Track Standards Committee.—The Track Standards Committee held their fifth meeting in July 1928 and sixth meeting in January and February 1929. The more important subjects considered were the preparation of designs for ordinary acute and obtuse crossings, switches for heavy sections of rails, F. F. 90 lb. and 115 lb.; revised designs for standard dog spikes, bearing plates and steel crossing sleepers with moveable jaws. The Committee also considered the Consulting Engineers' Note on Specification for Built-up Points and Crossings, the designs of sleepers received from certain manufacturers and some other types of sleepers. The Committee's designs of points and crossings dealt with in their fifth report were approved by the Railway Board for trial by the standard gauge railways.

Bridge Standards Committee.—The Bridge Standards Committee met once during the year under review. They held their sixth session from the 3rd to 22nd September 1928. Among the various subjects dealt with may be mentioned (1) the maximum axle loads that may be permitted to run on rails of various sections at various speeds, (2) rules for the calculation of trough spans and reinforced concrete slabs, with particular reference to the distribution of the live load, both longitudinally and transversely, and the design and construction of reinforced concrete slabs, (3) the impact experiments on metre gauge bridges and the new impact formula and (4) the revision of the standards of loading for metre gauge bridges. The designs of standard skew plate girder spans prepared by the North Western Railway were also examined.

The Committee's recommendations in regard to the impact formula for metre gauge bridges have been accepted by the Railway Board and those regarding the rules for the calculation of trough spans and reinforced concrete slabs are under investigation in consultation with the Consulting Engineers.

Signalling and Interlocking Standards Committee.—The Signal and Interlocking Standards Committee met twice during the year under review. They held their third session from the 14th to 25th May 1928 at Simla, and their fourth session in November 1928 at the Great Indian Peninsula Railway Offices, Bombay. The more important subjects considered were (1) the examining of different types of token Instruments, (2) standard drawings of signal fittings, (3) a catechism and rules for the design and inspection of signalling and interlocking, for inclusion in the "Rules for the Opening of a railway, etc.," and (4) the preparation of a manual of instructions for the maintenance and installation of signalling and interlocking and standard forms for use in connection therewith.

The standard drawings of signal fittings and the manual of instruction, etc., prepared by the committee have been approved by the Railway Board and are being printed for distribution to railways.

20. Re-organisation of the Cash Office on the Bengal Nagpur Railway.—The Cash Office on this railway was re-organised on a departmental basis under a Cashier who is an officer of the Audit Department. Under the new system, all cash collections are paid into the bank on the day following their receipt in the Cash Office, and cheques on the local treasury are drawn to replenish the funds of pay clerks for disbursements, instead of handing over cash to them at the head office, as was being done previously.

CHAPTER II.

FINANCIAL RESULTS.

21. The principal results of the working of railways are summarised in the table below :—

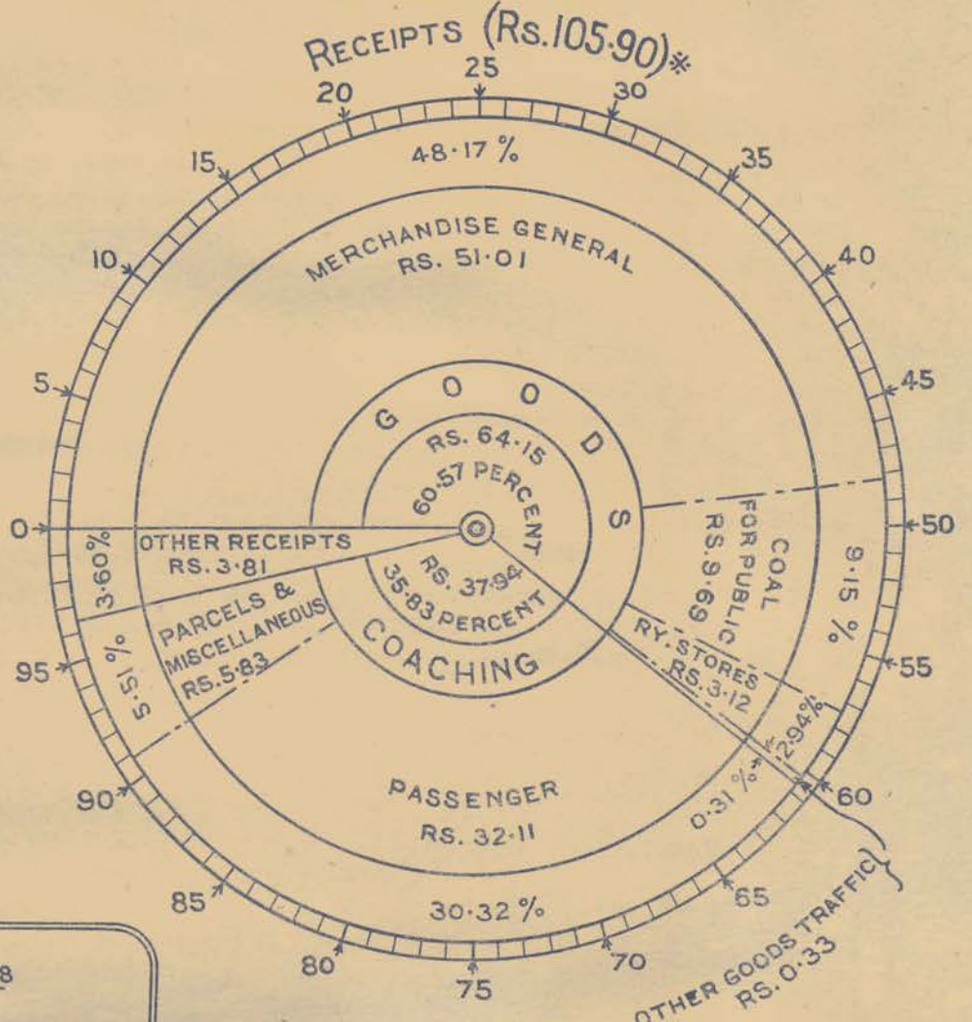
—		Class I Railways.	Other Railways.	Total of all Railways.
(*i*) Total route mileage open for traffic.	1927-28	35,587	4,125	39,712
	1928-29	**36,748**	**4,202**	**40,950**
(*ii*) Number of passengers originating.	1927-28	588,663,200	*34,451,400	*623,114,600
	1928-29	**583,911,900**	**36,198,200**	**620,110,100**
(*iii*) Number of passenger miles.	1927-28	20,908,343,000	*796,344,000	*21,704,687,000
	1928-29	**21,247,570,000**	**849,566,000**	**22,097,136,000**
(*iv*) Tons originating	1927-28	85,823,000	3,968,000	89,791,000
	1928-29	**86,994,000**	**3,841,000**	**90,835,000**
(*v*) Number of ton miles.	1927-28	21,620,094,000	282,128,000	21,902,222,000
	1928-29	**21,645,445,000**	**243,732,000**	**21,889,177,000**

* Revised figures.

22. Trade Review.—*Exports.*—The value of exports of Indian merchandise during the year rose by about 3 per cent. to Rs. 330 crores. This is remarkable in view of the fact that the outturn of all the principal crops excepting rice and groundnuts, had shown considerable decreases during the year. Despite a deficiency of 5 per cent. in the production, exports of raw cotton increased from 480,000 tons to 663,000 tons in quantity and from Rs. 48 crores to Rs. 66 crores in value. The value of cotton manufactures exported during the year declined from Rs. 8⅔ crores to Rs. 7¾ crores. Shipments of raw jute increased from 892,000 tons, valued at Rs. 30⅔ crores, to 897,900 tons, valued at Rs. 32 crores, notwithstanding a decrease of 3 per cent. in the yield of the jute crop. Though the winter oilseed crops (rape and mustard and linseed) of 1927-28 showed a decline of about 15 per cent., the total shipments of oilseeds advanced by 118,000 tons in quantity and in value by Rs. 3 crores. The increase was due mainly to larger shipments of groundnuts which showed an increase of 11 per cent. in yield. Exports of wheat declined from 299,700 tons, valued at Rs. 4·41 crores, to 114,700 tons valued at over Rs. 1⅔ crores owing to shortage of the crop in the Punjab in 1927-28, which was mostly moved during the year under review. The rice crop of the year showed an increase of 12 per cent. in comparison with the previous year's, but the shipments declined from 2 million tons to 1·8 million tons in quantity and from Rs. 33 crores to Rs. 26 crores in value. Exports of tea declined from 362 million lbs., valued at Rs. 32½ crores, to 360 million lbs., valued at Rs. 26⅔ crores—a decrease of only 0·6 per cent. in quantity but of 16 per

RAILWAY RECEIPTS AND EXPENDITURE ON STATE OWNED LINES IN INDIA IN 1928-29.

FIGURES IN CRORES

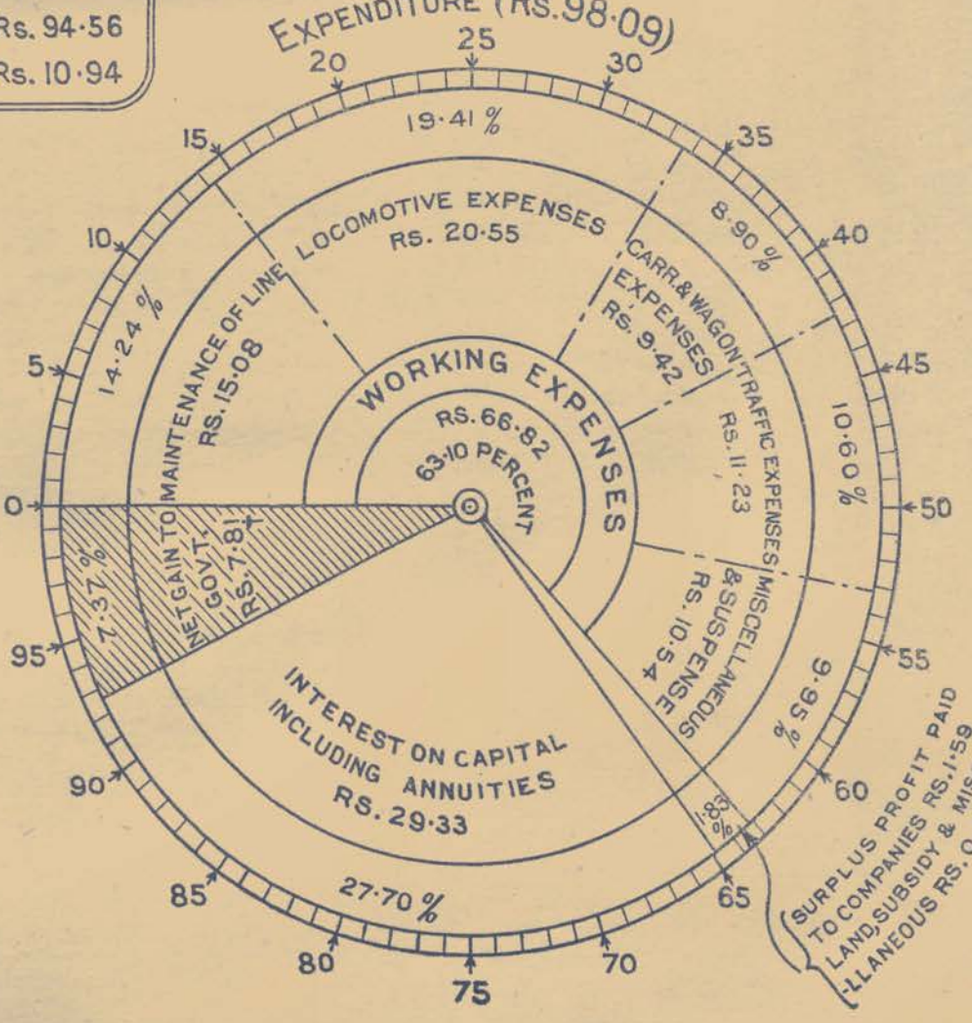


IN 1927 – 28

TOTAL RECEIPTS Rs.105·50

TOTAL EXPENDITURE Rs. 94·56

NET GAIN TO GOVT. Rs. 10·94



* THE DIFFERENCE OF RS. 1·57 IN TOTAL RECEIPTS AS COMPARED WITH ST. No. 3 OF VOL. II OF THE REPORT FOR 1928-29 IS DUE TO THE INCLUSION OF RS. 0·39 ON ACCOUNT OF GOVERNMENT SHARE OF SURPLUS PROFITS FROM SUBSIDIZED COMPANIES AND RS. 1·18 ON ACCOUNT OF MISCELLANEOUS RAILWAY RECEIPTS.

† THE DIFFERENCE OF RS. 1·22 IN NET GAIN TO GOVT. AS COMPARED WITH SUMMARY No. I. OF VOL. II OF THE REPORT FOR 1928-29 IS DUE TO THE INCLUSION OF RS. 0·04 ON ACCOUNT OF NET RECEIPTS FROM SUBSIDIZED RAILWAYS AND RS. 1·18 ON ACCOUNT OF MISCELLANEOUS RAILWAY RECEIPTS.

cent. in value. Exports of lac increased by 200,000 cwts. in quantity and by Rs. 2 crores in value.

Imports.—The total value of imports of foreign merchandise amounted to Rs. 253 crores, representing an increase of Rs. 3 crores over the figure for 1927-28. The chief increases were recorded under wheat (Rs. 7 crores), machinery of all kinds (Rs. 2½ crores), motor cars and motor omnibuses (Rs. 2 crores), and sugar (Rs. 1 crore). Imports of raw cotton declined from 66,000 tons, valued at Rs. 6¾ crores, to 29,000 tons, valued at Rs. 4 crores, owing to a decline in its absorption by the Bombay mills, which were closed for about 6 months on account of labour troubles. Imports of cotton manufactures declined from Rs. 65 crores to Rs. 63 crores and those of iron and steel and manufactures thereof declined by Rs. 1 crore to Rs. 20 crores. Imports of wheat amounted to 561,900 tons as compared with 69,200 tons in 1927-28.

The visible balance of trade in merchandise and treasure in 1928-29 was Rs. 52 crores in favour of India as compared with Rs. 50 crores in 1927-28.

23. Financial Results of Working.—The financial results of working the railways in 1928-29 are given in the statement below. They relate only to the transactions of the railways with which the Government of India is directly concerned :—

(Figures in thousands).

	1927-28.	1928-29.
	Rs.	Rs.
(*i*) (*a*) Gross Earnings . . .	1,04,23,72	**1,04,33,74**
(*b*) Surplus profits from subsidized companies	35,61	**38,84**
(*c*) Interest on Depreciation and Reserve Funds	81,48	**1,06,20**
(*d*) Other Miscellaneous Railway Receipts	8,17	**11,57**
Total Receipts .	1,05,48,98	**1,05,90,35**
(*ii*) (*a*) Working expenses (excluding Depreciation)	53,86,80	**54,82,70**
(*b*) Depreciation	11,37,55	**11,99,75**
(*c*) Surplus profits paid to Companies	1,57,14	**1,59,14**
(*d*) Land and Subsidy to Companies	5,33	**2,91**
(*e*) Interest	27,27,08	**29,32,96**
(*f*) Miscellaneous Railway Expenditure	50,17	**31,95**
Total . .	94,64,07	**98,09,41**
(*iii*) Net Gain	10,84,91	**7,80,94**
(*iv*) (*a*) Contribution from railway to general revenues (including ⅓ excess of railway surplus over 3 crores)	6,27,83	**5,23,20**
(*b*) Surplus railway revenue transferred to Railway Reserve Fund .	4,57,08	**2,57,74**
Total . .	10,84,91	**7,80,94**

24. From the foregoing statement, it will be observed that the net gain to the Central Government from railways amounted to 7·81 crores in 1928-29.

which is about 3 crores less than during the preceding year. Of this amount Rs. 5·23 crores accrued to General Revenues and the balance, Rs. 2·58 crores, was transferred to railway reserve.

25. The decrease of 3 crores in the net gain of 1928-29 is due chiefly to the increase in interest charges on capital outlay, resulting mainly from the higher rate of interest due to the inclusion for the first time of the value of income tax concessions on certain loans in the calculation of rate of interest and to the increase in working expenses, including appropriation to the depreciation fund, which were more than a crore and a half higher than in the previous year without being set off by a corresponding increase in earnings.

26. The comparative smallness of the improvement in gross traffic receipts in 1928-29 was due mainly to reductions in rates and fares. The North Western Railway fared worst with a decrease of 62 lakhs, followed by the East Indian Railway (25 lakhs) and the South Indian Railway (18 lakhs). These were, however, more than set off by substantial increases on the Madras and Southern Mahratta and Bombay, Baroda and Central India Railways and to an appreciable degree on the Great Indian Peninsula Railway. The variations are brought out in the table below :—

	Decrease —. Increase +.
	Lakhs.
North Western	—62
Eastern Bengal	+1
East Indian	—25
Great Indian Peninsula	+21
Burma	—10
Bengal Nagpur	—3
Bombay, Baroda and Central India	+52
Madras and Southern Mahratta	+57
South Indian	—18
Other railways.	—3
Total.	+10

The substantial increase on the Madras and Southern Mahratta Railway, which is the highest recorded in the history of that railway, is mainly due to a bumper groundnut crop following a favourable monsoon, resulting in large shipments in the early part of the year from the three ports of Madras, Mormugao and Cocanada served by this railway. The increase on the Bombay, Baroda and Central India Railway occurred chiefly under general merchandise. There was an increase of about 42 lakhs in goods traffic on the Great Indian Peninsula Railway, but this was partly reduced by a decrease of 27 lakhs in coaching earnings, due principally to a reduction in intermediate and third class fares. Miscellaneous earnings, however, made up about 6 lakhs.

There were diminutions in both goods and coaching traffic receipts on the North Western Railway, due mainly to the export of wheat, cotton and oil seeds being sub-normal and to the introduction of week-end tickets and reduction in 3rd class fares. Though the number of passengers travelling increased as a result of the reduction in fares, the increase was insufficient to counteract the effect of the reduction. The decrease on the East Indian Railway is likewise attributable to reduction in fares and also to smaller traffic in general merchandise. The strike on the South Indian Railway was mainly responsible for the decrease on that railway.

On all the other important railways the main cause of the variations in the traffic receipts of 1928-29 has also been the fall in the passenger earnings, despite the increase in the numbers carried, resulting principally from the

Lounge and Enquiry Office in Delhi Horse Show grounds (February 1929).

general reductions in fares. This was more than neutralised, however, by the increase in goods earnings.

27. The ordinary working expenses, excluding depreciation, were nearly a crore more in 1928-29 than in 1927-28. The following table shows the variations on the individual railways:—

	Decrease —. Increase +.
	Lakhs.
North Western	—5
Eastern Bengal	+11
East Indian	+5
Great Indian Peninsula	+18
Burma	+23
Bengal Nagpur	+6
Bombay, Baroda and Central India	+23
Madras and Southern Mahratta	+6
South Indian	+2
Other railways	—3
Suspense	+9
Total	+95

The increase in expenditure is attributable generally to the opening of about 1000 miles of new lines for traffic during the year. In addition the more important increases were due to payments of gratuities to workshop staff brought under reduction on the Bombay, Baroda and Central India Railway, to the repairs of the extensive breaches caused by floods on the Burma Railways and to extensive repairs to structural works on the Great Indian Peninsula Railway.

28. The following table compares the working expenses of 1927-28 and 1928-29 under the major heads for which grants are voted by the Assembly:—

(Figures in thousands).

	1927-28.	1928-29.	Difference.
	Rs.	Rs.	Rs.
1. General Administration	13,44,26	**14,19,92**	+75,66
2. Repairs and Maintenance and Operation	43,90,60	**44,58,57**	+67,97
3. Appropriation to Depreciation Fund	11,37,55	**11,99,75**	+62,20
Total	68,72,41	**70,78,24**	+2,05,83
Deduct—Worked lines and Suspense	3,48,06	**3,95,79**	+47,73
Total Working Expenses	65,24,35	**66,82,45**	+1,58,10

The increase in expenditure under General Administration of about $\frac{3}{4}$ crore is due partly to the extra staff employed on the new lines opened during the year and partly to the annual increments to the staff and the resultant payments on account of provident fund bonus. The extensive repairs of structural and other works and the maintenance and operative costs of new lines, mentioned in the preceding paragraph, account for the increase of about $\frac{2}{3}$ crore under repairs and maintenance and operation. The increase under depreciation fund follows the increased capital expenditure on which the contribution is calculated.

29. The contribution to General Revenues amounted to 523 lakhs, or 105 lakhs less than in 1927-28. The statement below shows how this is arrived at :—

(Based on actuals of penultimate year 1926-27).

(Figures in thousands of rupees.)

	Rs.	Rs.
1. 1 per cent. on capital of 6,30,00,03 at charge—commercial lines—to end of 1926-27	...	6,30,00
2. (*i*) Receipts (1926-27)—		
Gross traffic receipts—commercial lines . . .	97,50,52	
Subsidized companies—share of surplus profits . .	39,72	
Interest on depreciation and reserve fund balances and dividends on investments in branch lines and miscellaneous receipts	67,27	
TOTAL RECEIPTS .		98,57,51
(*ii*) Charges (1926-27)—		
Working expenses—commercial lines.	62,53,01	
Indian States and railway companies' share of surplus profits	1,65,56	
Land and subsidy	5,21	
Interest—		
On capital at charge—commercial lines . . .	22,98,45	
On capital contributed by Indian States and companies	1,56,90	
Miscellaneous railway expenditure . . .	65,30	
Contribution at 1 per cent. on capital at charge—commercial lines	6,30,00	
TOTAL CHARGES .		95,74,43
(*iii*) Surplus		2,83,08
(*iv*) Contribution of one-fifth of surplus		56,62
3. Total contribution from railway revenues 1 *plus* 2 (*iv*) . .		6,86,62
Deduct—Loss on strategic lines—		
(*i*) Interest on capital of 31,60,50	1,31,35	
(*ii*) Loss in working	32,07	
(*iii*) Net payment due from railway to general revenues in 1928-29	5,23,20	
4. *Add* $\frac{1}{3}$ of excess over 3 crores of surplus in 1928-29 arrived at as follows :—		
(*i*) Total receipts including Government share of surplus profits from subsidized companies and interest on depreciation and reserve Fund balances and other miscellaneous receipts	1,05,90,35	
(*ii*) Total charges (including surplus profits paid to companies, interest and other miscellaneous charges)	98,09,41	
(*iii*) Total gain from railways during 1928-29 . . .	7,80,94	
(*iv*) Excess of gain over contribution 4 (*iii*)—3 (*iii*) .	2,57,74	
(*v*) Contribution equal to $\frac{1}{3}$ excess over 3 crores . .	...	
5. Total contribution to General Revenues during 1928-29, 3 (*iii*) *plus* 4 (*v*)	5,23,20	

30. The return during 1928-29 on the total capital at charge of both commercial and strategic lines is 5·22 per cent. or ·19 per cent. less than in 1927-28. This compares with the returns during the last 5 years as follows :—

1923-24	5·24
1924-25	5·85
1925-26	5·31
1926-27	5·05
1927-28	5·41
1928-29	5·22

31. The amount appropriated to the depreciation fund by debit to working expenses of state-owned railways and the amounts drawn from this fund to meet the expenditure incurred on the replacements and renewals actually carried out on those railways during 1927-28 and 1928-29 are given in the statement below :—

(Figures in thousands of rupees).

Railways.	Credits to Depreciation Fund by debit to Revenue on account of depreciation in 1927-28.	Amount spent on Replacements and Renewals and charged to Depreciation Fund in 1927-28.	Credits to Depreciation Fund by debit to Revenue on account of depreciation in 1928-29.	Amount spent on Replacements and Renewals and charged to Depreciation Fund in 1928-29.
State Lines managed by State.				
North Western	2,28,04	1,96,79	2,46,09	1,70,95
Eastern Bengal	79,04	51,72	82,88	50,79
East Indian	2,07,27	1,18,76	2,15,53	1,25,61
Great Indian Peninsula	1,57,93	2,73,46	1,66,62	2,04,11
Burma	45,11	36,99	46,66	25,13
Aden	36	...	33	11
State Lines managed by Companies.				
Bengal Nagpur	1,16,45	57,25	1,18,07	1,66,10
Bombay, Baroda and Central India	1,23,69	1,14,43	1,29,60	68,70
Madras and Southern Mahratta	81,12	1,20,98	87,07	63,78
South Indian	53,47	93,15	59,52	55,30
Other railways	45,07	31,60	47,38	29,26
TOTAL	11,37,55	10,95,13	11,99,75	9,59,84

32. An analysis of the financial results of the working of the railways owned by the State is given in the statement below for the last three years, by each railway :—

(Figures in thousands of Rupees.)

Railways.	Year.	Capital at charge.	*Deduct* amount of capital contributed by Companies and Indian States.	Net Government Capital at charge.	Receipts.	Working Expenses including Depreciation.	Net Receipts.	Percentage of Net Receipts on Capital at charge.	Charge against net Revenue Receipts.		Gain.	Loss.
									Payment on account of share of Surplus Profits.	Interest Annuity and Sinking Fund charges.		
1	2	3	4	5	6	7	8	9	10	11	12	13
State Lines managed by State.												
North Western	1926-27	1,25,50,02	...	1,25,50,02	15,70,70	11,50,40	4,20,30	3·3	...	4,63,97	...	43,67
	1927-28	1,33,10,61	...	1,33,10,61	16,59,28	11,94,93	4,64,35	3·5	...	5,09,35	...	45,00
	1928-29	**1,36,53,60**	...	**1,36,53,60**	**15,97,24**	**12,07,68**	**3,89,56**	**2·9**	...	**5,54,59**	...	**1,65,03**
Eastern Bengal	1926-27	45,06,73	...	45,06,73	6,77,12	4,45,39	2,31,73	5·1	...	1,61,52	70,21	...
	1927-28	46,81,70	...	46,81,70	7,08,20	4,59,64	2,48,56	5·3	...	1,68,46	80,10	...
	1928-29	**47,83,76**	...	**47,83,76**	**7,08,98**	**4,75,12**	**2,33,86**	**4·9**	...	**1,79,98**	**53,88**	...
East Indian	1926-27	1,34,73,85	...	1,34,73,85	19,77,51	12,02,37	7,75,14	5·7	...	5,08,17	2,66,97	...
	1927-28	1,40,16,48	...	1,40,16,48	20,66,85	12,15,10	8,51,75	6·1	...	5,32,71	3,19,04	...
	1928-29	**1,39,75,44**	**59,96**	**1,39,15,48**	**20,41,85**	**12,28,09**	**8,13,76**	**5·9**	...	**5,70,19**	**2,43,57**	..
Great Indian Peninsula	1926-27	1,09,69,26	...	1,09,69,26	14,80,21	10,42,40	4,37,81	4·0	...	3,66,41	71,40	
	1927-28	1,13,92,91	...	1,13,92,91	15,22,67	9,91,02	5,31,65	4·7	...	3,90,87	1,40,78	...
	1928-29	**1,11,82,28**	...	**1,11,82,28**	**15,44,00**	**10,17,61**	**5,26,39**	**4·7**	...	**4,18,70**	**1,07,69**	...
Burma	1926-27	29,44,23	6,69,67	22,74,56	4,62,69	2,85,09	1,77,60	6·0	49,48	1,03,81	24,31	...
	1927-28	31,35,12	6,69,67	24,65,45	5,06,63	2,97,71	2,08,92	6·1	35,63	1,11,83	61,46	...
	1928-29	**32,76,06**	...	**32,76,06**	**4,96,38**	**3,23,05**	**1,73,33**	**5·3**	**45,52**	**1,23,34**	**4,47**	...
State Lines managed by Companies.												
Bengal Nagpur	1926-27	68,47,92	11,19,91	57,28,01	8,22,29	5,60,55	2,61,74	3·8	6,92	2,95,28	...	40,46
	1927-28	70,18,68	10,53,13	59,65,55	9,17,45	6,22,94	2,94,51	4·2	8,72	3,06,10	...	20,31
	1928-29	**71,61,07**	**10,53,13**	**61,07,94**	**9,14,15**	**6,31,28**	**2,82,87**	**3·9**	**7,47**	**3,22,63**	...	**47,23**

Bombay, Baroda and Central India	1926-27	68,82,57	2,52,10	(a) 66,30,47	11,35,35	7,30,62	4,04,73	5·9	(c) 20,90	2,41,47	1,42,36	...	
	1927-28	71,49,30	2,52,32	(a) 68,96,98	11,45,28	7,20,04	4,25,24	5·9	(c) 15,12	2,52,60	1,57,52	...	
	1928-29	**70,24,26**	**2,52,46**	**(a)67,71,80**	**11,96,98**	**7,48,88**	**4,48,10**	**6·3**	**(c) 15,73**	**2,68,23**	**1,64,14**	...	
Madras and Southern Mahratta	1926-27	52,81,15	10,07,08	42,74,07	8,12,55	4,77,13	3,35,42	6·3	(d) 76,10	1,95,90	63,42	...	
	1927-28	55,30,58	10,07,08	45,23,50	8,65,90	4,77,47	3,88,43	7·0	(d) 76,27	2,08,57	1,03,59	...	
	1928-29	**54,75,45**	**10,07,08**	**44,68,37**	**9,22,87**	**4,88,51**	**4,34,36**	**7·9**	**(d) 73,22**	**2,23,44**	**1,37,70**	...	
South Indian	1926-27	30,71,60	4,15,33	(b) 26,56,27	5,48,91	3,04,69	2,44,22	7·9	(e) 8,67	1,15,90	1,19,65	...	
	1927-28	33,96,76	4,15,33	(b) 29,81,43	5,80,67	3,13,80	2,66,87	7·1	(e) 10,54	1,31,68	1,24,65	...	
	1928-29	**35,87,53***	**4,15,33**	**(b)31,72,20**	**5,63,24**	**3,23,20**	**2,40,04**	**6·6**	**(e) 6,27**	**1,52,61**	**81,16**	...	
Other railways	1926-27	35,68,34	5,14,56	30,53,78	4,16,65	2,32,00	1,84,65	5·1	3,49	1,34,27	46,89	...	
	1927-28	37,11,95	5,14,56	31,97,39	4,50,79	2,40,47	2,10,32	5·7	10,86	1,14,91	84,55	...	
	1928-29	**37,92,19**	**4,54,61**	**33,37,58**	**4,48,05**	**2,39,03**	**2,09,02**	**5·5**	**10,93**	**1,19,25**	**78,84**	...	
Suspense	1926-27	...	...	...	...	9,08	—9,08	...	...	...	...	9,08	
	1927-28	...	...	...	...	**—8,77**	**8,77**	...	...	...	**8,77**	...	
	1928-29	...	...	...	...	...	..	...	...	...	...	...	
Interest on Depreciation and Reserve Fund balances	1926-27	...	...	...	63,92	...	63,92	...	...	...	63,92	...	
	1927-28	...	...	...	81,48	...	81,48	...	...	...	81,48	...	
	1928-29	...	...	...	**1,06,20**	...	**1,06,20**	...	...	...	**1,06,20**	...	
Net Miscellaneous Receipts and Charges not attributable to any one Railway.	1926-27	...	...	...	...	...	...	...	...	...	...	26,26	
	1927-28	...	...	...	...	...	...	...	...	...	...	**11,72**	
	1928-29	...	...	...	...	...	...	...	...	...	**15,55**	...	
Total (Central)	1926-27	7,00,95,67	39,78,65	6,61,17,02	99,67,90	64,39,72	35,28,18	5·0	1,65,56	25,86,70	7,49,66‡	...	
	1927-28	7,33,44,09	39,12,09	6,94,32,00	1,05,05,20	65,24,35‡	39,80,85‡	5·4	1,57,14	27,27,08	10,84,91‡	...	
	1928-29	**7,39,11,64**	**32,42,57**	**7,06,69,07**	**1,05,39,94*f***	**66,82,45*f***	**38,57,49*f***	**5·2**	**1,59,14**	**29,32,96**	**7,80,94**	...	
Provincial Railways	1926-27	19,98	...	19,98	2,61	2,53	8	0·4	...	87	...	79	
	1927-28	14,94	...	14,94	1,13	1,02	11	0·7	...	57	...	46	
	1928-29	**14,61**	...	**14,61**	**1,03†**	**5†**	**98†**	...	...	**55**	**43**	...	

(Figures in thousands of rupees).

Railways.	Year.	Capital at charge.	*Deduct* amount of capital contributed by Companies and Indian States.	Net Government Capital at charge.	Receipts.	Working Expenses including Depreciation.	Net Receipts.	Percentage of Net Receipts on Capital at charge.	Charge against Net Revenue Receipts.		Gain.	Loss.
									Payment on account of share of Surplus Profits.	Interest Annuity and Sinking Fund charges.		
1	2	3	4	5	6	7	8	9	10	11	12	13
State Lines managed by Companies—contd.												
	1926-27	7,01,15,65	39,78,65	6,61,37,00	99,70,51	64,42,25	35,28,26	5·0	1,65,56	25,87,57	7,48,87	...
Grand Total (Central and Provincial)	1927-28	7,33,59,03	39,12,09	6,94,46,94	1,05,06,33	55,25,37	39,80,96	5·4	1,57,14	27,27,65	10,84,45	...
	1928-29	**7,39,26,25**	**32,42,57**	**7,06,83,68**	**1,05,40,97**	**66,82,50**	**38,58,47**	**5·2**	**1,59,14**	**29,33,51**	**7,81,37**	...
	1926-27	94,04,50	...	94,04,50	14,18,70	9,64,47	4,54,23	4·8	...	3,33,30	1,20,93	...
North Western (Commercial Lines)	1927-28	1,00,68,84	...	1,00,68,84	14,99,84	10,01,22	4,98,62	6·8	...	3,75,32	1,23,30	...
	1928-29	**1,03,43,31**	...	**1,03,43,31**	**14,31,69**	**10,10,18**	**4,21,51**	**4·0**	...	**4,12,77**	**8,74**	..
	1926-27	31,60,50	...	31,60,50	1,53,45	1,86,72	—33,27	—1·5	...	1,31,35	...	1,64,62
Non-Commercial (Strategic Lines) (North Western and Aden Railways).	1927-28	32,41,77	..	31,41,77	1,60,40‡	1,94,67‡	—34,27‡	—1·3	...	1,34,03	...	1,68,30
	1928-29	**33,10,29**	...	**33,10,29**	**1,66,65***f*	**1,98,60***f*	**—31,95***f*	**—0·9**	...	**1,41,82**	...	**1,73,77**

(*a*) Includes Capital provided by the Palanpur Durbar.
(*b*) „ „ expenditure on Tinnevelly Quillon (Indian State section).
(*c*) „ payments to Durbars :—

	1926-27.	1927-28.	1928-29.
Jaipur Durbar	10,74	7,21	7,65
Limbdi „	...	21	6
Palanpur „	17	18	21
(*d*) Includes payments to Mysore Durbar	21,71	21,67	25,07
(*e*) „ „ Travancore „	1,29	1,86	19

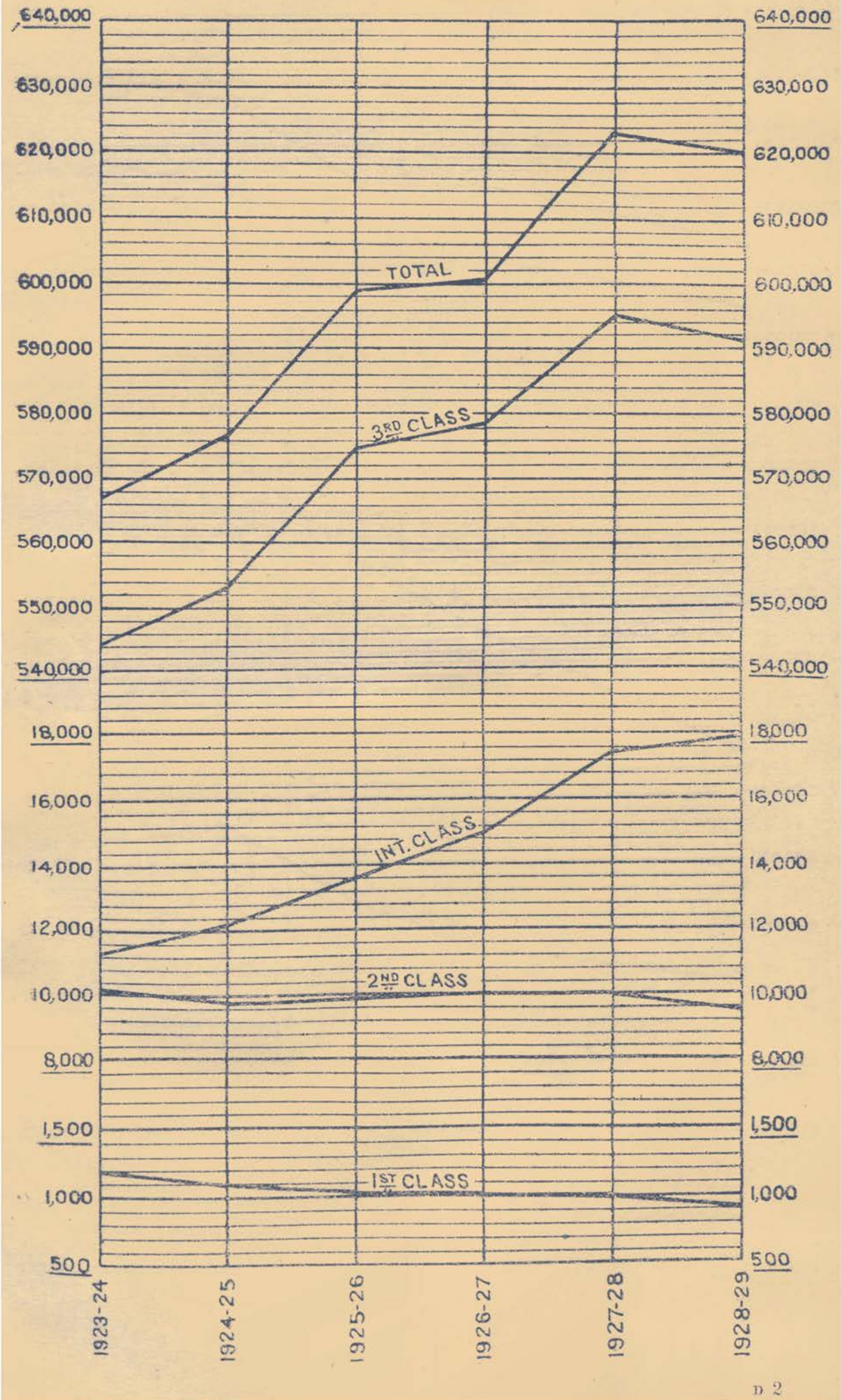
‡ Includes Aden Railway :—
Column 6 excludes 96 for Aden Railway (strategic portion).
„ 7 „ 96 „ „ „
Net receipt for Aden strategic is "*Nil.*"
f. Includes Aden Railways :—
Column 6 . . . 1·10
„ 7 . . . 1·10
„ 8 . . . *Nil.*

\+ Represent figures on account of subsidized Companies, etc.

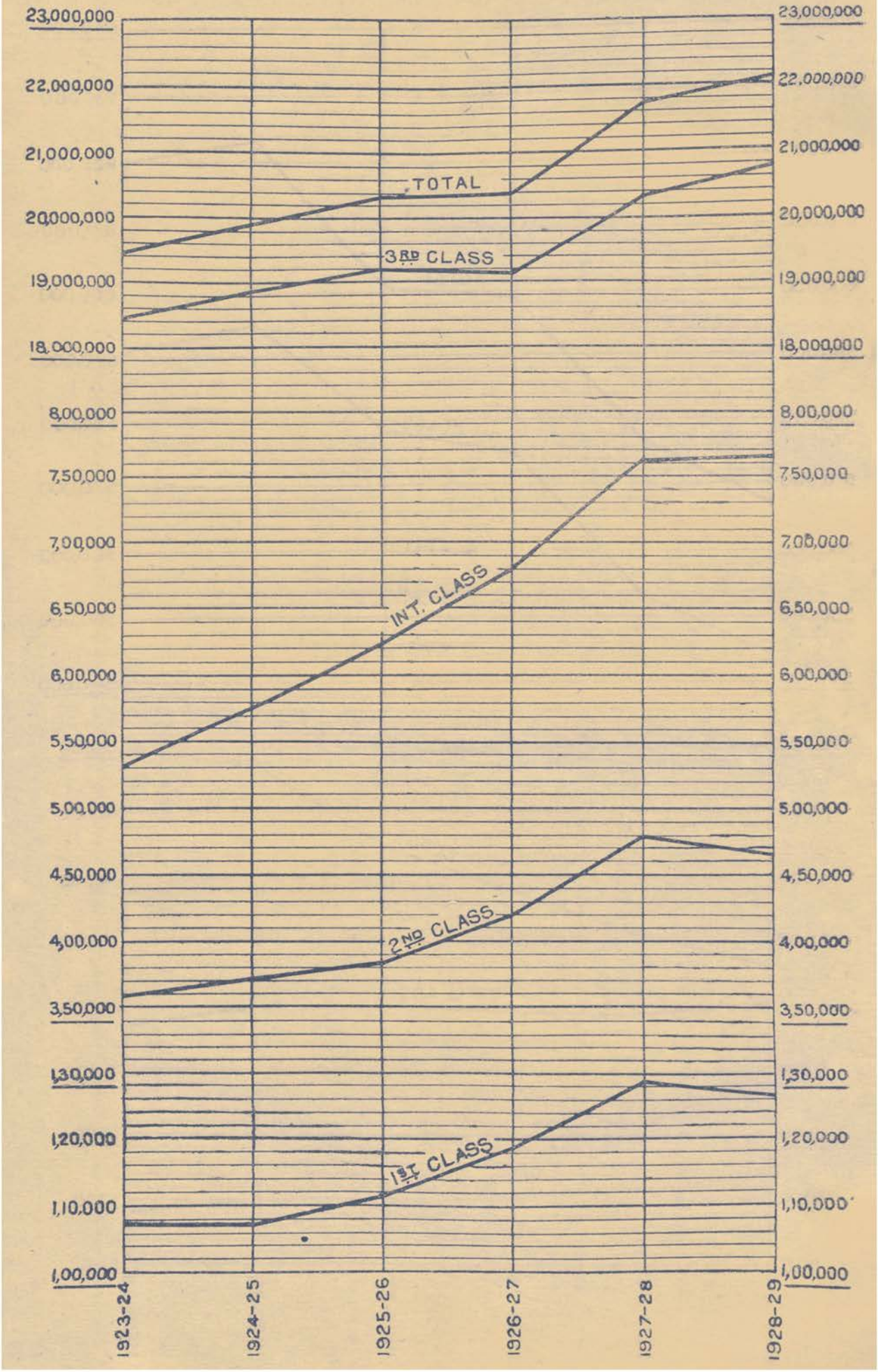
* Includes 5·27 representing the outlay on the Suramangalam-Salem Railway brought on without financial adjustment.
Figures of Capital at charge of 1928-29 include sterling liabilities involved in the purchase of Railways converted at 1*s.* 6*d.* to the rupee and those of 1926-27 and 1927-28 include sterling liabilities converted at 1*s.* 4*d.* to the rupee.

NUMBER OF PASSENGERS CARRIED ON INDIAN RAILWAYS

(IN THOUSANDS)



PASSENGER MILES
INDIAN RAILWAYS
(IN THOUSANDS)



33. Analysis of Earnings.—The total earings of all Indian railways, including those with which the Government of India is not directly concerned, amounted to Rs. 118·87 crores, of which Rs. 71·16 crores or 59·9 per cent. were from goods traffic, Rs. 38·24 crores or 32·2 per cent. from passenger traffic and Rs. 9·47 crores or 7·9 per cent. from parcels, luggage and miscellaneous earnings.

Passenger earnings.—Passenger earnings showed a decrease of 2·40 per cent. from Rs. 39·18 to 38·24 crores. The following table shows the numbers of and earnings from passengers separately for each class for the 4 years previous to the War and for the 6 latest years. Graphs are also inserted showing the progressive increases in the numbers of passengers carried and of passenger miles by classes from the beginning of 1923-24:—

Year.	Number of passengers carried (in thousands).					Earnings from passengers (in thousands of rupees).				
	1st Class.	2nd Class.	Inter. Class.	3rd Class.	Season and Vendor's tickets.	1st Class.	2nd Class.	Inter. Class.	3rd Class.	Season and Vendor's tickets.
1910 . .	685	2,784	10,702	315,839	24,341	58,82	77,23	94,99	14,65,16	15,85
1911 . .	703	2,947	11,409	331,055	25,687	66,38	83,83	1,08.88	15,73,15	16,85
1912 . .	700	3,030	10,508	356,789	26,810	62,90	83,31	91,37	17,01,35	17,55
1913-14 . .	715	3,253	12,000	390,412	30,114	68,94	88,70	1,03,48	18,37,03	19,36
1923-24 . .	1,199	10,128	11,374	544,622	†	1,31,17	2,02,73	1,41,10	33,32,82	†
1924-25 . .	1,101	9,778	12,201	553,266	†	1,22,93	1,92,09	1,48,01	34,12,45	†
1925-26 . .	1,033	9,901	13,602	574,608	†	1,20,42	1,89,42	1,59.61	34,76,54	†
1926-27 . .	1,012	10,006	14,945	578,409	†	1,17,78	1.88,31	1,61,79	33,44,63	†
1927-28 . .	980	9.963	17,351	594,821	†	1,13,71	1,95.67	1,69,33	34,39.39	†
1928-29 .	**912**	**9,585**	**17,870**	**591,743**	†	**1,12,25**	**1,91,89**	**1,66,43**	**33,53,82**	†

† The number of season and vendor's tickets and their earnings included under the respective classes; the former at the rate of 50 single journeys per month.

Note.—In pre-war reports the sum of the numbers of passengers carried on each separate railway was shown as the total number of passengers carried on all railways. Passengers travelling over two or more railways were thus counted as two or more passengers. The actual number of passengers carried on all railways is in fact the same as the number of passengers originating and this figure has been adopted for 'number of passengers carried' in the reports from 1923-24 onwards. As the number of passengers originating is not available prior to 1923-24 the figures of pre-war years have been modified.

34. Reductions in rates and fares.—Mention was made in last year's report of the reductions in passenger fares made over the Bengal and North-Western, Eastern Bengal, East Indian and Great Indian Peninsula Railways. During 1928-29, the following further reductions were given effect to over the principal railways:—

Great Indian Peninsula Railway.—With effect from 1st May 1928 fares for inter class by mail were reduced from 7½ pies to 6 pies per mile for the first 300 miles. From the same date third class fares were reduced by ½ pie per mile for distances over 50 miles.

North Western Railway.—With effect from 1st April 1928 third class fares were reduced by ½ pie per mile for distances over 50 miles.

East Indian Railway.—With effect from 1st May 1928 third class fares were reduced by ½ pie per mile for distances over 50 miles.

Bombay, Baroda and Central India Railway.—With effect from 1st August 1928 third class fares by other than mail trains were reduced by ¼ pie per mile for distances over 150 miles.

Madras and Southern Mahratta Railway.—The scale of fares for third class which was as follows:—

	Pies per mile.
By mail trains	4
By trains other than mail:—	
For the first 50 miles	3½
Plus, for 51—100 miles	3¼
Plus, for over 100 miles	3

was revised as follows with effect from 1st October 1928 :—

	Pies per mile.
By mail trains :—	
For the first 100 miles	4
Plus, for 101—300 miles	$3\frac{1}{2}$
Plus, for over 300 miles	$2\frac{1}{2}$
By trains other than mail :—	
For the first 50 miles	$3\frac{1}{2}$
Plus, for 51—150 miles	3
Plus, for 151—300 miles	$2\frac{1}{2}$
Plus, for over 300 miles	2

South Indian Railway.—The scale of fares for third class which was as follows :—

	Pies per mile.
By mail trains :—	
For the first 100 miles	$4\frac{1}{2}$
Plus, for over 100 miles	4
By trains other than mail :—	
For the first 50 miles	$3\frac{1}{2}$
Plus, for over 50 miles	3

was revised as follows with effect from 1st October 1928 :—

	Pies per mile.
By mail trains :—	
For the first 100 miles	4
Plus, for 101—300 miles	$3\frac{1}{2}$
Plus, for over 300 miles	$2\frac{1}{2}$
By trains other than mail :—	
For the first 50 miles	$3\frac{1}{2}$
Plus, for 51—300 miles	$2\frac{1}{2}$
Plus, for over 300 miles	2

Burma Railways.—The scale of fares for third class which was as follows :—

	Pies per mile.
For the first 300 miles	$3\frac{1}{2}$
Plus, for over 300 miles	3

was revised as follows with effect from 1st January 1929 :—

	Pies per mile.
For the first 50 miles	$3\frac{1}{2}$
Plus, for 51—150 miles	$3\frac{1}{4}$
Plus, for 151—300 miles	3
Plus, for over 300 miles	$2\frac{1}{2}$

Eastern Bengal Railway.—With effect from 15th March 1929 the scale of fares for third class which was $3\frac{1}{2}$ pies per mile for all distances was revised as follows :—

	Pies per mile.
For the first 150 miles	$3\frac{1}{2}$
Plus, for 151—300 miles	$2\frac{1}{2}$
Plus, for over 300 miles	$1\frac{1}{2}$

35. In addition to these changes in passenger fares, reductions were also made for the following items of coaching traffic :—

(i) *Parcels and Luggage.*—Over practically all railways, a revised scale was introduced which effected a reduction of approximately 15 per cent. in the charges previously applicable. The unit for charge was lowered from ten to five seers.

Bhore Ghat Re-alignment—New Track.

(ii) *Horses and live stock by passenger train.*—These were being charged on all principal railways at a rate of 4 annas per mile for the first animal and one anna per mile for each additional animal. The rate for the first animal was reduced as follows :—

	Annas per mile.
For the first 500 miles	3
For the additional distance over 500 miles . .	2

This change was given effect to over practically all railways.

(iii) *Motor cars by passenger trains.*—The charge for a single car was previously six annas per mile at owner's risk and eight annas per mile at railway risk. The following revised scale was introduced over practically all railways :—

	Annas per mile.	
	At owner's risk.	At railway's risk.
For the first 300 miles	5	7
For the additional distance over 300 miles	4	5

36. For goods traffic also, substantial reductions, as indicated below, were made over all State-managed railways and also over certain Company-managed railways as noted against each :—

(*a*) *Kerosine oil (including gas oil and liquid fuel).*—The previous rate was 0·42 pie per maund per mile and the revised scale introduced was on the following telescopic basis :—

	Pie per maund per mile.
For the first 300 miles	0·420
Plus, for 301—400 miles	0·300
Plus, for 401—500 miles	0·200
Plus, for 501—600 miles	0·125
Plus, for 601—700 miles	0·115
Plus, for over 700 miles	0·100

This scale was adopted also over the Bombay, Baroda and Central India, Madras and Southern Mahratta, South Indian, Bengal Nagpur and Jodhpur Railways.

(*b*) *Manures and oil-cake.*—These were being charged at varying rates over the different railways, and the reduction made was to the lowest rate railways in India are authorised to charge, *viz.*, 0·10 pie per maund per mile. This rate was adopted also over the Bombay, Baroda and Central India, Madras and Southern Mahratta, South Indian, Bengal Nagpur and Jodhpur Railways.

(*c*) *Petrol.*—The previous rate was 0·83 pie per maund per mile, and the revised scale introduced was on the following telescopic basis :—

	Pie per maund per mile.
For the first 300 miles	0·83
Plus, for 301—600 miles	0·42
Plus, for over 600 miles	0·38

This scale was adopted also over the Bombay, Baroda and Central India, Madras and Southern Mahratta, South Indian, Bengal Nagpur and Jodhpur Railways.

(*d*) *Jagree.*—As in the case of manures and oil-cake, this commodity was being charged at varying rates over the different railways.

The following telescopic scale of rates, at owner's risk, was introduced :—

	Pie per maund per mile.
For the first 100 miles	0·380
Plus, for 101—300 miles	0·220
Plus, for 301—600 miles	0·130
Plus, for over 600 miles	0·110

This scale was adopted also over the Bombay, Baroda and Central India, Madras and Southern Mahratta, South Indian and Jodhpur Railways.

(*e*) *Grain, pulses and seeds common.*—The rates on the East Indian Railway which for distances up to 97 miles, and on the North Western Railway up to 232 miles were higher than on the Great Indian Peninsula Railway, were brought down to the level of the latter railway.

37. The reduction in fares and rates mentioned in the preceding paragraphs was estimated to result in a loss of revenue aggregating to Rs. 279 lakhs per annum over the State-managed Railways alone, on the assumption that no increase in traffic resulted. It was anticipated, however, that the very substantial reductions made would have an immediate effect in stimulating the growth of traffic and that the actual loss would be considerably less. The extent to which these modifications were realised have been referred to, so far as recorded statistics are available in paragraph 26.

38. In paragraph 4 of the report for 1925-26 reference was made to the amalgamation of the East Indian and Oudh and Rohilkhand Railways. It was, however, not practicable at the time to treat these two railways as one system for the purpose of calculating rates and fares, with the result that the telescopic scales applicable over each line stopped short at the old junctions and terminals were charged as if the two lines were separate. The co-ordination of the rates and fares charged over these lines involved a detailed examination of the traffic that would be affected by such co-ordination. It was found possible to give effect to the change from 1st March 1928.

39. During 1928-29, 5·3 million less passengers were carried on Class I Railways than in 1927-28 and passenger earnings also decreased by Rs. 1 crore. The following statement shows how these decreases were distributed over the various railway administrations :—

Name of Railway.	Variations in the No. of Passengers carried as compared with 1927-28.	Variations in Earnings as compared with 1927-28.
		Rs.
Assam Bengal	+437,600	+2,02,000
Bengal and North Western . .	−2,368,900	−9,38,000
Bengal Nagpur	+384,800	−4,20,000
Bombay, Baroda and Central India	+486,300	+11,73,000
Burma	−1,751,400	−10,59,000
Eastern Bengal	+1,514,900	−1,81,000
East Indian	−4,788,700	−45,38,000
Great Indian Peninsula . .	−1,137,700	−14,59,000
Jodhpur	+162,900	+6,000
Madras and Southern Mahratta .	+837,500	−1,94,000
His Exalted Highness the Nizam's Guaranteed State . . .	−708,000	+3,11,000
North Western	+2,335,200	−23,76,000
Rohilkund and Kumaon . .	−822,100	−2,90,000
South Indian	+78,900	−5,29,000
Total . .	−5,338,700	−1,02,92,000

40. Passengers travelling without tickets.—The question of adopting more intensive methods to ensure that passengers do not travel without tickets

continues to engage the special attention of railways. The actual measures taken vary on the different railways, and it is proposed in the following paragraphs to indicate briefly what has been done in this respect during the year under review on some of the principal railways.

Assam Bengal Railway.—The number of travelling ticket examiners was increased from 36 to 42, resulting in an increase in the number of passengers detected travelling without tickets or in any other irregular manner from 39,069 to 47,989.

The crew system (to which reference is made in a subsequent paragraph dealing with the East Indian Railway) was tried experimentally, but the results obtained were not such as to justify the expenditure involved when compared with the present methods.

Bengal Nagpur Railway.—The ticket checking staff was strengthened by the appointment of 12 additional travelling ticket examiners and one inspector-in-charge.

On 259 occasions trains were stopped out of course for the purpose of checking tickets, resulting in 13,880 cases of passengers without tickets, etc., being detected and Rs. 23,019 being collected.

Bengal and North-Western Railway.—The number of travelling ticket checkers was increased from 65 to 137. All important trains now have one or two men on checking duty, day and night, while other trains are checked two or three times during each week.

Burma Railways.—An intensive ticket checking campaign was carried out. A few Burmese Buddhist priests who have interested themselves in this matter have been preaching that travelling over the railway without a ticket is a breach of the five precepts which every Burman Buddhist is enjoined to observe, as such an act is equivalent to thieving.

Eastern Bengal Railway.—The crew system, which was introduced on the southern section of this railway during the previous year, having worked satisfactorily, the experiment was tried on the main line suburban section, to which the crewmen were transferred for this purpose. The earnings of the suburban section showed a pronounced increase, whereas those of the southern section immediately decreased. The crew system was, therefore, re-introduced on the southern section and earnings again increased. This system is now in operation on those sections of the line where the passenger traffic is heaviest.

The operations of the crew system brought to light various fraudulent practices, and in 37 cases only out of the 924, in which prosecutions were instituted, were convictions not secured.

East Indian Railway.—The crew system of ticket checking, which necessitates the provision of a staff of ticket checkers, with a supervisor in charge thereof, accompanying every passenger train throughout its run, now operates on the greater part of the East Indian Railway system and is believed to have had very satisfactory results. A checker is normally detailed for each coach on the train, with instructions to prevent any passenger entering the carriage unless he holds a proper ticket. These ticket checkers are also responsible for collecting tickets from passengers before they alight at their destination. An exact statement of the value of this system in terms of increased earnings is not possible, as the effect of tightening control over passengers is to cause tickets to be purchased.

Great Indian Peninsula Railway.—The extent of the evil with which the administration has to contend may be gauged from the following figures, showing the number of passengers detected without tickets and the amounts of excess fares and penalty recovered from them during the last three years.

Year.	Number.	Fares.	Penalty.
		Rs.	Rs.
1926-27 . . .	464,857	5,11,942	87,568
1927-28 . . .	450,944	5,28,345	83,671
1928-29 . . .	380,488	4,19,873	74,025

The crew system of checking and collecting passengers' tickets was introduced on the Manmad-Bhusaval, Bhusaval-Amalner, Bhusaval-Harda and Bhusaval-Badnera sections.

Jodhpur Railway.—An experiment on a small scale with the "crew system" demonstrated clearly the existence of a considerable amount of fraudulent practices, which remained undetected under the method of check exercised by one travelling ticket examiner on a train and the ticket collecting staff at stations. The experiment with the crew system was, therefore, extended to two selected sections, where also it has proved to be a distinct success, and the experiment is, therefore, being extended to other sections.

Madras and Southern Mahratta Railway.—All ticket inspectors, examiners and collectors were organised into one unit, vacancies in which are being filled by recruiting pensioned Indian Army Commissioned and Non-Commissioned Officers, who are given a thorough course of training and posted to an important checking station to gain experience before being given any position of responsibility.

With the object of educating both the staff and the travelling public and to prevent fraudulent travelling, propaganda work was undertaken. A circular was issued to each station master suggesting methods for preventing fraudulent travelling and a personal letter was addressed to each ticket collector. Posters both in English and in the vernaculars were posted in carriages and in prominent positions at stations. Special steps were also taken to prosecute passengers found travelling without tickets and refusing to pay the fares demanded. Where it was considered that magistrates had failed to deal with cases satisfactorily, appeals for revision were filed.

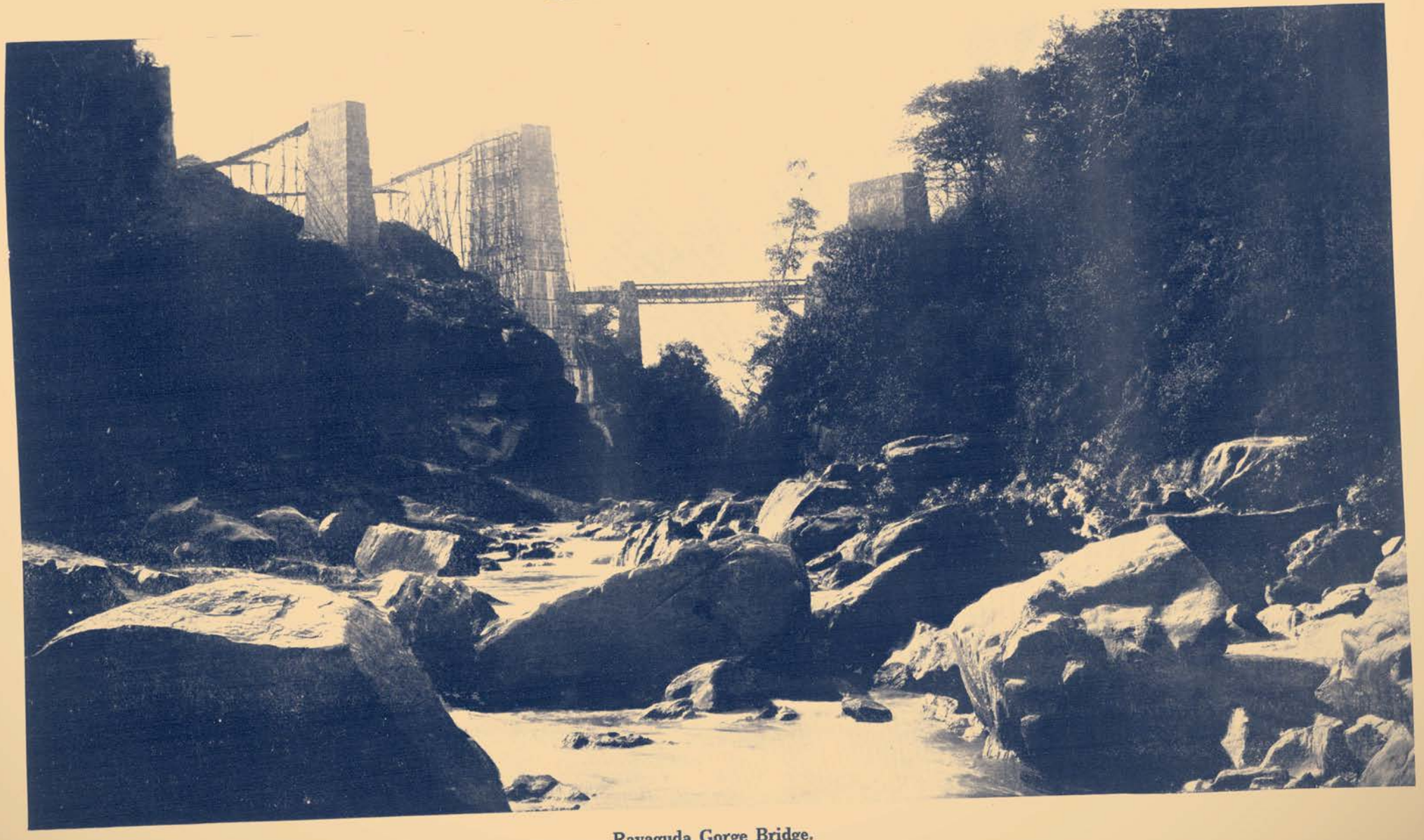
North Western Railway.—The control of travelling ticket examiners was transferred from the Chief Auditor to the Divisional Superintendents, who have been able to co-ordinate the working of these examiners and render more effective the checks on illicit travelling.

South Indian Railway.—On the Southern division a modified form of the crew system, which was introduced in December 1927, was extended to all other divisions of the railway from December 1928. Under this arrangement two crewmen are allotted to each train: one acting as a supervisor.

41. Goods Earnings.—There was an increase in earnings from goods traffic on all railways amounting to Rs. 1·75 crores, chiefly due to improved earnings from provisions, rice, gram and pulse including jowar and bajra and other grains and oil seeds.

The tonnage of, and earnings from, the principal commodities on Class I Railways during the last two years are shown in the statement below. Apart from the main increases, mentioned above, there were increases under cotton, sugar and iron and steel, but decreases under railway materials, materials and stores on revenue account, wheat, gur, jagree and molasses and kerosine oil.

Commodity.	1927-28.		1928-29.		Increase + Decrease — in Earnings (lakhs).
	No. of tons originating (in millions).	Rs. (in crores).	No. of tons originating (in millions).	Rs. (in crores).	
(1) Fuel for public and Foreign Railways.	20·38	10·17	20·10	10·15	—2
(2) Materials and stores on Revenue account.	14·84	3·37	15·47	3·17	—20
(3) Wheat . . .	1·76	2·62	1·85	2·43	—19
(4) Rice in the husk and rice not in the husk.	4·40	4·11	4·93	4·78	+67
Carried over .	41·38	20·27	42·35	20·53	+26



Rayaguda Gorge Bridge.

Commodity.	1927-28.		1928-29.		Increase + Decrease − in Earnings (lakhs).
	No. of tons originating (in millions).	Rs. (in crores).	No. of tons originating (in millions).	Rs. (in crores).	
Brought forward .	41·38	20·27	42·35	20·53	+26
(5) Gram and Pulse, Jowar and Bajra and other grains.	3·00	4·15	3·37	4·80	+65
(6) Marble and stone . .	3·33	1·02	3·59	1·03	+1
(7) Metallic ores . .	2·95	1·35	2·84	1·32	—3
(8) Salt	1·48	1·98	1·49	2·00	+2
(9) Wood, unwrought .	1·32	0·89	1·32	0·86	—3
(10) Sugar, refined and unrefined.	0·79	1·81	0·84	1·99	+18
(11) Oilseeds . . .	2·74	4·15	3·01	4·53	+38
(12) Cotton raw and manufactured.	1·54	5·98	1·69	6·17	+19
(13) Jute, Raw . . .	1·18	1·70	1·18	1·71	+1
(14) Fodder . . .	0·75	0·60	0·94	0·66	+6
(15) Fruits and vegetables fresh.	1·19	1·08	1·24	1·08	...
(16) Iron and steel wrought .	1·20	2·28	1·29	2·43	+15
(17) Kerosine oil . .	1·06	2·26	1·06	2·10	—16
(18) Gur, Jagree, Molasses, etc.	0·75	1·15	0·72	0·97	—18
(19) Tobacco . . .	0·28	0·69	0·32	0·77	+8
(20) Provisions . . .	0·69	1·41	1·00	2·39	+98
(21) Manures . . .	*	*	0·15	0·12	+12
(22) Military stores . .	0·38	0·42	0·37	0·41	—2
(23) Railway materials . .	9·91	1·51	8·31	1·09	—43
(24) Live stock . . .	0·22	0·68	0·22	0·69	+1
(25) Other commodities .	9·68	11·96	9·69	11·47	—49
TOTAL .	85·82	67·34	86·99	69·12	+178

* Figures not available.

42. Stores Balances.—The table below compares the figures of stores balances since 1921-22 :—

(In thousands.)

Railways.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28	1928-29.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Assam Bengal .	24,81	31,48	18,38	12,30	9,49	12,59	13,01	14,91
Bengal Nagpur .	1,40,26	1,61,88	1,48,09	1,49,44	1,27,64	1,17,17	1,07,87	1,32,69
Bombay, Baroda and Central India.	2,76,83	2,72,43	2,33,25	1,77,39	1,62,48	1,46,28	1,67,17	1,62,35
Burma . . .	66,62	84,85	98,71	84,62	75,00	44,82	59,41	61,25
East Indian (including Oudh and Rohilkhand).	3,92,50	4,39,19	4,10,66	3,14,19	2,81,46	2,48,17	2,98,92	3,14,89
Eastern Bengal .	2,51,63	1,76,20	1,57,85	1,21,99	1,12,27	84,07	84,39	79,53
Great Indian Peninsula.	4,66,49	3,88,35	3,97,77	2,89,49	2,38,67	2,23,13	2,53,49	2,41,88
Madras and Southern Mahratta.	1,50,52	1,66,09	1,50,91	1,92,86	84,31	76,75	93,91	83,29
North Western .	3,94,12	3,92,69	3,79,78	3,24,39	3,23,75	3,67,81	4,82,73	4,59,64
South Indian . .	1,14,45	1,38,66	99,02	77,04	1,13,30	1,06,60	1,23,76	1,14,51
Other Railways .	41,13	46,96	63,50	54,94	40,08	41,46	48,15	44,57
TOTAL .	23,19,36	22,98,78	21,57,92	17,08,65	15,68,45*	14,68,85	17,32,81	17,09,51

* Final figures.

The unremitting efforts of Railway Administrations to reduce the balances of stores resulted in a net reduction of nearly a quarter of a crore at the close of the year.

43. Compensation claims for goods.—The table below shows by each Class I Railway the amounts paid on account of compensation for goods lost or damaged during the last seven years. It will be seen that there has been an increase of Rs. 1·43 lakhs during 1928-29, as compared with 1927-28. The figures are, however, substantially lower as compared with other years, being only 9 per cent. of the amount paid in 1922-23.

*Claims for goods lost or damaged paid by Class I Railways (excluding Jodhpur Railway) during 1922-23 to 1928-29.**

Railways.	1922-23.	1923-24.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Percentage to Goods Earnings.	
								1927-28.	1928-29.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Assam Bengal .	23,085	17,069	17,587	21,841	20,979	18,006	20,973	0·16	0·18
Bengal and North-Western.	1,70,516	1,62,461	80,680	92,932	85,369	59,875	45,387	0·31	0·26
Bengal Nagpur .	1,98,972	2,63,703	2,01,889	80,093	54,988	65,248	1,02,726	0·10	0·16
Bombay, Baroda and Central India.	15,68,572	6,44,678	6,03,064	4,40,465	2,60,213	1,57,447	1,21,175	0·22	0·16
Burma . .	45,183	29,319	33,662	30,982	41,295	42,791	34,696	0·14	0·11
Eastern Bengal .	1,98,554	1,77,020	1,68,020	1,86,736	1,83,822	1,71,266	1,53,676	0·45	0·39
East Indian .	57,99,225	42,72,620	30,61,451	11,73,008	3,82,219	2,36,368	2,27,600	0·18	0·17
Great Indian Peninsula.	19,68,436	16,17,133	6,63,609	3,41,130	1,92,400	1,18,333	1,45,133	0·12	0·14
Madras and Southern Mahratta.	2,21,125	1,54,162	85,548	91,018	84,859	80,517	95,330	0·14	0·15
His Exalted Highness the Nizam's Guaranteed State.	38,222	24,206	17,022	18,219	11,211	11,270	11,443	0·09	0·08
North Western .	16,89,608	4,73,339	6,84,162	3,89,771	1,55,097	—36,383	99,446	—0·03	0·09
Rohilkund and Kumaon.	45,015	16,681	21,860	17,088	4,318	7,347	7,204	0·21	0·21
South Indian .	63,951	44,502	32,045	48,536	45,169	17,691	28,350	0·06	0·10
Total .	1,20,30,554	78,96,893	56,70,499	29,31,819	15,21,939	9,49,776	10,98,139	0·14	0·16

* These figures exclude the amount of credits afforded to home line departments for the loss of their goods.

EAST INDIAN RAILWAY.

Bally Bridge—Dredging at No. 3 Pier (12th January 1929).

CHAPTER III.

NEW CONSTRUCTION AND ENGINEERING WORKS.

44. Capital Expenditure.—At the end of March 1929 the total Capital at charge on all railways, including those under construction, amounted to Rs. 831·39 crores of which Rs. 739·12 crores was Capital at charge on State-owned Railways inclusive of premia paid in the purchase of Companies' lines. The remainder Rs. 92·13 crores represented Capital raised by Indian States, Companies and District Boards.

The Capital at charge of State-owned Railways is composed as follows :—

	£
Liability and debt incurred in purchase of railways.	150,106,630
Less liability and debt cancelled by the operation of Annuities and Sinking Funds	—29,257,066
Net amount outstanding	120,849,564*

	Rs. (omitting 000)
Direct expenditure by Government.	5,77,98,96
The above figure converted at Rs. $13\frac{1}{3}$ = £1 . . .	1,61,12,68
Total . .	7,39,11,64

By far the greater portion of this amount, namely, Rs. 7,06,69,07,000 is Government Capital and only 1/19th or Rs. 32,42,57,000 is owned by Companies. These figures include Rs. 33·10 crores on account of Capital expenditure to the end of March 1929 on strategic lines.

45. The total Capital outlay on all railways during 1928-29 was Rs. 27·53 crores of which Rs. 25·41† crores were spent on State-owned Railways. The following statement shows how this outlay of Rs. 25·41 crores was distributed between open line works, rolling stock and new lines, similar figures being given for the previous four years and for 1913-14.

Year.	Open Lines.			New lines.	Grand Total.
	Works including Stores.	Rolling-stock.	Total.		
	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.
1913-14	9·30	7·31	16·61	1·86	18·47
1924-25	4·66	6·42	11·08	2·39	13·47
1925-26	9·44	5·80	15·24	4·01	19·25
1926-27	16·74	4·13	20·87	6·27	27·14
1927-28	17·21	5·37	22·58	9·86	32·44
1928-29	**12·37**	**4·08**	**16·45**	**8·96**	**25·41**

* £118,274,564 converted at the rate of £1=Rs. $13\frac{1}{3}$ and £2,575,000 representing the Great Indian Peninsula Railway Company's share capital paid off during 1925-26 converted at the average rate of exchange.

† Includes Rs. 5,27,170 on account of capital expenditure on Salem-Suramangalam Railway transferred without financial adjustments.

46. The distribution of the capital outlay in 1928-29 over the different State-owned lines is shown in the summary below :—

Railways.	Open Lines.			New lines.	Grand Total.
	Works, etc.	Rolling-stock.	Total.		
	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.
Bengal Nagpur . . .	0·42	0·18	0·60	0·82	1·42
Bombay, Baroda and Central India	0·88	0·17	1·05	0·13	1·18
Eastern Bengal . . .	0·79	0·38	1·17	0·51	1·68
East Indian	2·84	0·59	3·43	1·49	4·92
Great Indian Peninsula . .	3·03	0·91	3·94	0·18	4·12
Madras and Southern Mahratta .	0·77	0·30	1·07	0·56	1·63
North Western	1·71	0·73	2·44	2·26	4·70
South Indian	0·97	0·33	1·30	1·56	2·86
Other Railways . . .	0·96	0·49	1·45	1·45	2·90
Total .	12·37	4·08	16·45	8·96	25·41

47. Lines opened during 1928-29.—1,282·15 miles of railways were opened to public traffic during the year and consisted of :—

476·22 miles on the 5′ 6″ Gauge.

597·93 „ „ „ 3′ 3⅜″ „

208·00 „ „ „ 2′ 6″ and 2′ 0″ Gauges

Details regarding the sections opened are given below :—

Name of line.	Gauge.	Mileage.	Owner.	Working agency.	Date of opening.
Daltonganj-Barkakhana . .	5′ 6″	113·38	State . .	East Indian Railway.	31st January 1929.
Anupur-Bijuri	5′ 6″	29·61		Bengal Nagpur Railway.	7th July 1928.
Rohtak-Gohana-Panipat . .	5′ 6″	44·01		North Western Railway.	15th May 1928.
Batala-Qadian	5′ 6″	12·04		Do. .	20th December 1928.
Chhinnikhichi-Hundewali . .	5′ 6″	21·88		Do. .	10th January 1929.
Sargodha-Shahpur City . .	5′ 6″	22·22		Do. .	20th March 1929.
Bahawalnagar-Faqirwali . .	5′ 6″	40·39	Bahawalpur State.	Do. .	4th April 1928.
Faqirwali-Fort Abbas . .	5 6″	22·69		Do. .	8th November 1928.
Agra-Kasba Fatehabad . . .	5′ 6″	22·00	State . .	Great Indian Peninsula Railway.	17th September 1928.
Baruipur-Lakshmikantapur . .	5′ 6″	23·26		Eastern Bengal Railway.	14th December 1928.
Abdulpur-Rampur Boalia . .	5′ 6″	25·14		Do. .	14th March 1929.
Nidadavolu-Narasapuram . .	5′ 6″	47·16		Madras and Southern Mahratta Railway.	3rd February 1929.

EAST INDIAN RAILWAY.

Bally Bridge under construction General view of Works.

Name of line.	Gauge.	Mileage.	Owner.	Working agency.	Date of opening.
Asifabad Road-Balharshah . .	5′ 6″	52·44	His Exalted Highness the Nizam.	His Exalted Highness the Nizam's Guaranteed State Railways.	15th November 1928.
Cuddalore-Vriddachalam . .	3′ 3⅜″	35·59		South Indian Railway.	21st June 1928.
Vriddhachalam-Lalgudi . .	3′ 3⅜″	59·33		Do. .	1st February 1929.
Dindigul-Pollachi	3′ 3⅜″	75·10		Do. .	19th November 1928.
Madura-Bodinayakanur . .	3′ 3⅜″	55·94		Do. .	20th November 1928.
Heho-Shwenyaung . . .	3′ 3⅜″	11·25		Burma Railways	2nd May 1928.
Kayan-Thongwa	3′ 3⅜″	10·80		Do. .	15th December 1928.
Pirganj-Ruhea	3′ 3⅜″	23·75		Eastern Bengal Railway.	8th May 1928.
Purnea-Murliganj	3′ 3⅜″	34·80		Do. .	20th March 1929.
Furkating-Bhalukmara . . .	3′ 3⅜″	42·28	State . .	Assam-Bengal Railway.	1st July 1928.
Bhalukmara-Jorhat . . .					1st August 1928.
Shaistaganj-Habiganj . . .	3′ 3⅜″	8·47		Do. .	1st November 1928.
Karimganj-Longai Section . .	3′ 3⅜″	21·40		Do. .	1st December 1928.
Baraigram-Dullabchera . .	3′ 3⅜″	18·05		Do. .	1st January 1929.
Netrakona-Thakurkona . .	3′ 3⅜″	6·60		Do. .	15th January 1929.
Gudivada-Bhimavaram . . .	3′ 3⅜″	40·28		Madras and Southern Mahratta Railway.	17th September 1928.
Dronachellam (Dhone-Kurnool Extension) (Kurnool-Hyderabad Frontier).	3′ 3⅜″	4·37		His Exalted Highness the Nizam's Guaranteed State Railways.	1st September 1928.
Allumpur Road British Frontier .	3′ 3⅜″	3·04	His Exalted Highness the Nizam.	Do. .	1st September 1928.
Makrana-Parbatsar . . .	3′ 3⅜″	13·21	Jodhpur State	Jodhpur Railway	1st August 1928.
*Samdari-Mokalsar . . .	3′ 3⅜″	16·23		Do. .	1st February 1929.
Balwara-Jalore	3′ 3⅜″	22·44		Do. .	15th March 1929.
Nohar-Bhadran	3′ 3⅜″	25·10	Bikaner State	Bikaner Railway	16th September 1928.
Sarupsar-Anupgarh . . .	3′ 3⅜″	35·28		Do. .	30th March 1928.
Vijapur-Ambliyasan . . .	3′ 3⅜″	25·76	Baroda State .	Bombay, Baroda and Central India Railway.	1st October 1928.
Ningala-Gadhada . . .	3′ 3⅜″	9·52	Bhavnagar State	Bhavnagar Railway.	1st January 1929.
Shimoga-Shimoga Town . .	3′ 3⅜″	1·34	Mysore State .	Mysore Railway	31st January 1929.
Piplod-Devgad Baria . . .	2′ 6″	9·52	Baria State .	Bombay, Baroda and Central India Railway.	1st January 1929.
Barauli-Sirmuttra . . .	2′ 6″	3·81	Dholpur State .	Dholpur State Railway.	1st March 1929.
Kulasekarapatnam-Udangudi .	2′ 0″	3·00	The East India Sugar Factories,	Distilleries and Limited.	6th March 1929.
Pathankot-Jogindar Nagar . .	2′ 6″	*103·03	State . .	North Western Railway.	1st December 1928.
Killah-Saifullah-Fort Sandeman .	2′ 6″	*88·64	State . .	Do. .	15th January 1929.

48. Lines under construction on 31st March 1929.—During the year under review sanction was accorded to the construction of new lines totalling 653·00 miles.

	Miles.
5′ 6″	440·81
3′ 3⅜″	212·19

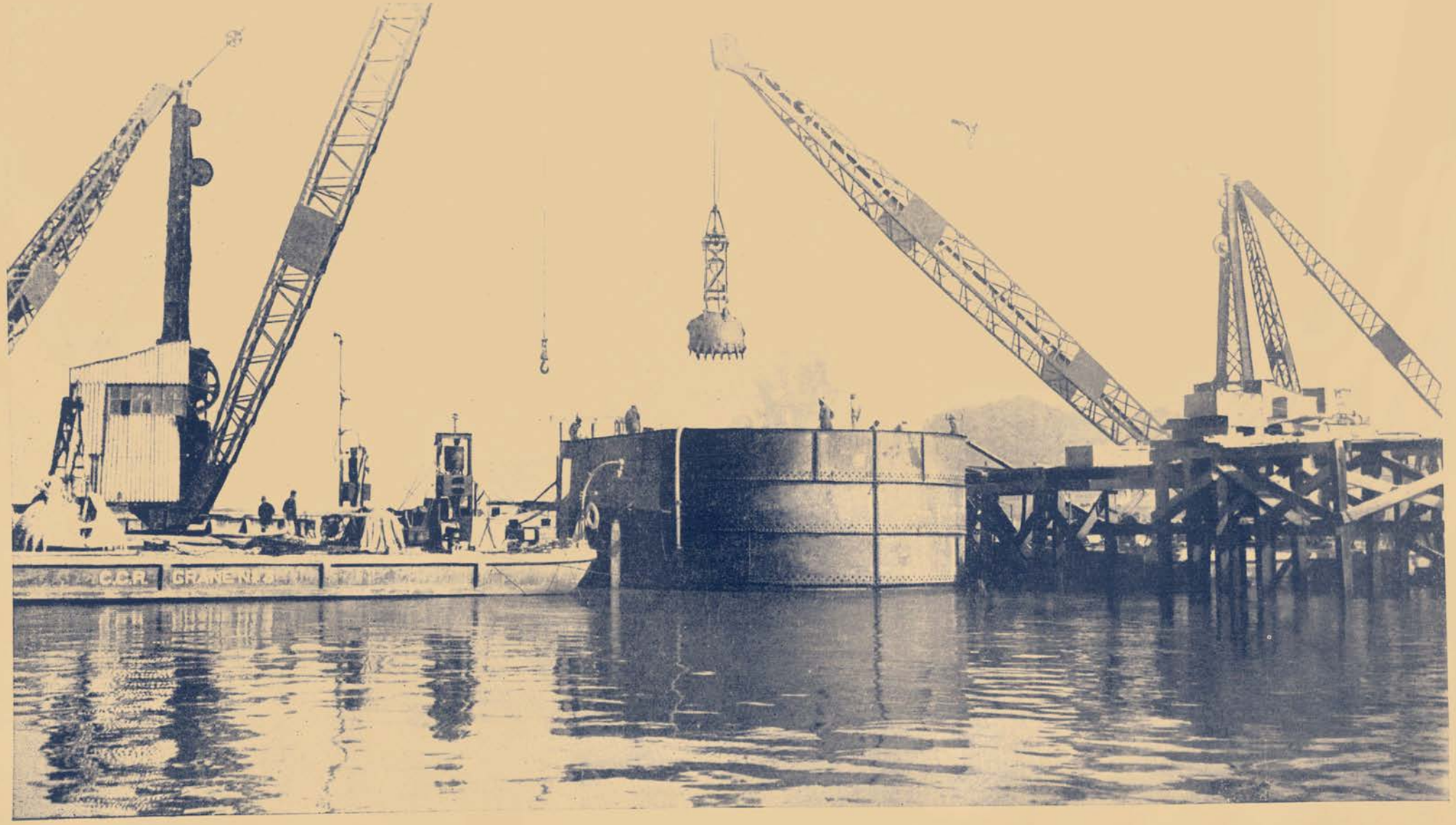
* Opened for goods traffic only.

At the end of the financial year 1928-29 a total of 2,896·17 miles of new lines was under construction distributed as follows :—

	Miles.
5′ 6″	1,375·66
3′ 3⅜″	1,288·74
2′ 6″ and 2′ 0″	231·77

49. The lines under construction are given in the table below which also shows the construction agencies and the progress reached :—

Name of line.	Gauge.	Mileage actually under construction.	Working agency.	Progress of work. Proportion completed.
Guttitanagar Branch	5′ 6″	7·23	Bengal-Nagpur Railway.	·39 Works suspended till 1932.
Raipur-Vizianagram (Raipur-Parbatipur Section).	5′ 6″	241·56		·48
Contai Road-Contai	5′ 6″	33·95		·00
Boriavi-Vadtal	5′ 6″	3·71	Bombay, Baroda and Central India Railway.	1·00
Vasad-Katana	5′ 6″	26·62		·24
Rampur Boalia-Nawabganj	5′ 6″	31·56	Eastern Bengal Railway.	·68
Kalukhali-Bhatiapara	5′ 6″	53·07		·05
Dacca-Aricha (Rajbari-Narayanganj).	5′ 6″	64·20		·00
Central India Coalfields Railway—Bijuri-Karimati.	5′ 6″	10·44	East Indian Railway.	·99
Calcutta Chord Ry.	5′ 6″	10·53		·65
Unao-Madhoganj	5′ 6″	47·93		·65
Chandpur-Bijnor-Muazzampur Narain.	5′ 6″	37·36		·80
Lucknow-Sultanpur-Zafarabad	5′ 6″	136·46		·25
Kasba Fatehabad-Bah	5′ 6″	21·19	Great Indian Peninsula Railway.	·99
Khamgaon-Chikli	5′ 6″	38·50		·01 Construction suspended.
Kartal-Kamasin	5′ 6″	58·66		·16
Belapur-Sheogaon	5′ 6″	45·50		·05
Amraoti-Narkhed	5′ 6″	79·00		·03
Cocanada-Kotipalli	5′ 6″	27·03	Madras and Southern Mahratta Railway.	·80
Vikarabad-Bidar	5′ 6″	57·26	His Exalted Highness the Nizam's Guaranteed State Railways.	·30
Bhadrachelam Road-Ramaram	5′ 6″	1·99		·00
Dera Baba Nanak-Jassar	5′ 6″	5·67	North Western Railway.	·98
Chiniot-Chhinnikhichi	5′ 6″	3·41		·33
Shahpur City-Khushab	5′ 6″	6·00		·30
Qadian-Beas	5′ 6″	29·54		·33
Resalewala-Tandlianwala	5′ 6″	32·65		·07
Tandlianwala-Chananwala	5′ 6″	77·19		·01
Sind Left Bank Feeders	5′ 6″	162·10		·09 on Mahrabpur-Padidan. ·07 on Tharushah Sakrand. ·07 on Tando Adam-Nawabshah.



Bally Bridge—Final sinking at No. 6 Pier (12th January 1929).

Name of line.	Gauge.	Mileage actually under construction.	Working agency.	Progress of work. Proportion completed.
Salem-Mettur Dam . . .	5′ 6″	25·35	South Indian Railway	·97
Thakurkona-Mohanganj . .	3′ 3⅜″	10 83	Assam-Bengal Railway.	·88
Shaistaganj-Balla . . .	3′ 3⅜″	16·82		·64
Feni-Belonia	3′ 3⅜″	16·88		·73
Senchua-Mairabari . . .	3′ 3⅜″	30·25		·43
Chittagong-Nazirhat . . .	3′ 3⅜″	23·15		·47
Chittagong-Dohazari . . .	3′ 3⅜″	25·00		·08
Mashrak-Thawe . . .	3′ 3⅜″	39·32	Bengal and North Western Railway.	·01
Natmauk-Nyaungdo . . .	3′ 3⅜″	34·70	Burma Railways .	·65
Nyaungdo-Kyaukpadaung . .	3′ 3⅜″	12·40		·33
Myingyan-Myotha . . .	3′ 3⅜″	42·00		·80
Myotha-Paleik	3′ 3⅜″	27·00		·70
Nyaunglebin-Madauk . . .	3′ 3⅜″	11·30		·85
Minbu and Pakkoku District Railways.	3′ 3⅜″	311·87		·35 on Taungdwingyi-Patanago.
Banmankhi-Behariganj . .	3′ 3⅜″	17·13	Eastern Bengal Railway.	·75
Guntur-Gurzala-Macherla . .	3′ 3⅜″	80·44	Madras and Southern Mahratta Railway.	·80
Trichinopoly-Manamadura . .	3′ 3⅜″	93·48	South Indian Railway.	·60
Salem-Attur-Vriddhachalam . .	3′ 3⅜″	82·53		·15
Pollachi-Palghat . . .	3′ 3⅜″	33·45		·08
Khalipur-Kakhal . . .	3′ 3⅜″	17·22	Bombay, Baroda and Central India Railway.	Work held in abeyance.
Wagrod-Khareda . . .	3′ 3⅜″	12·44		
Vijapur-Ransipur . . .	3′ 3⅜″	14·01		Construction deferred since 1922.
Tahsil Bhadran-Sadulpur . .	3′ 3⅜″	40·00	Bikaner Durbar .	·15
Halvad-Maliya Extension . .	3′ 3⅜″	26 00	Bombay, Baroda and Central India Railway.	·00
Sidsar (Paneli Moti)-Patan . .	3′ 3⅜″	7·85	Gondal . . .	Work held in abeyance since 1922.
Khambaliya-Saliya . . .	3′ 3⅜″	8·96	Jamnagar and Dwarka Railway Company.	·00
Phalodi-Pokaran . . .	3′ 3⅜″	37·00	Jodhpur Durbar	·00
Jalore-Bhinmal	3′ 3⅜″	39·22		·45
Prachi Road-Una . . .	3′ 3⅜″	29·58	Junagad Durbar .	·37 Work deferred since 1925.
Kankroli-Sursingh ji-ka-Gudha .	3′ 3⅜″	75·00	Mewar Durbar . .	·35
Shimoga Town-Arasalu . .	3′ 3⅜″	25·16	Mysore Durbar .	·80 (Shimoga-Shimoga Town opened) Work deferred.
Nanjangud-Mysore Frontier .	3′ 3⅜″	4·83	.....	Nanjangud-Chamarajnagar section opened. ·05 on Chamarajnagar Hardhanhalli section which has been temporarily closed since 1920.
Parbhani-Purli	3′ 3⅜″	39·49	His Exalted Highness the Nizam's Guaranteed State Railways.	·45
Extension of the Quilon-Trivandrum Railway to Thambanur.	3′ 3⅜″	3·43	South Indian Railway	·00

Name of line.	Gauge.	Mileage actually under construction.	Working agency.	Progress of work. Proportion completed.
Jambusar-Kavi	2′ 6″	17·87	Bombay, Baroda and Central India Railway.	·76
Samni-Dehej	2′ 6″	24·72		·77
Dharwa-Pusad	2′ 6″	42·67	Great Indian Peninsula Railway.	·12
Zankhvav-Umerpada	2′ 6″	13·17	Baroda Durbar	·89
Umerpada-Bardipada	2′ 6″	9·40		·00
Dungarda-Waghai Extension	2′ 6″	2·20		·63
Navsari-Kamrej	2′ 6″	26·25		·00
Mahuwa-Anawal	2′ 6″	17·91		·00
Warsamedi-Bachau	2′ 6″	19·86	Cutch Durbar	·80
Dholpur-Rajkhera	2′ 6″	22·34	Dholpur Durbar	·16. Construction held in abeyance since 1923.
Parlakimedi-Varanasi	2′ 6″	16·00	Bengal-Nagpur Railway.	·80
Varanasi-Gunupur	2′ 6″	15·63		·52
Kulasekarapatnam Port-Manpad	2′ 0″	0·75	East Indian Distilleries and Sugar Factories, Limited.	·00
Tirupati-Tiruchanur	2′ 0″	3·00	Tirupati-Tiruchanur Railway Company.	·00

50. Lines opened.—Of the lines opened during the year the following may be specially mentioned:—

Kazipet-Balharshah Railway.—The Kazipet-Balharshah which has already been described in the Railway Board's Report for 1926-27 has now been completed, the last section having been opened for traffic on 15th November 1928. As already stated, this line forms an important new link, facilitating communication between the Madras Presidency and the Central Provinces, and reducing the distance between Madras and Delhi by 200 miles.

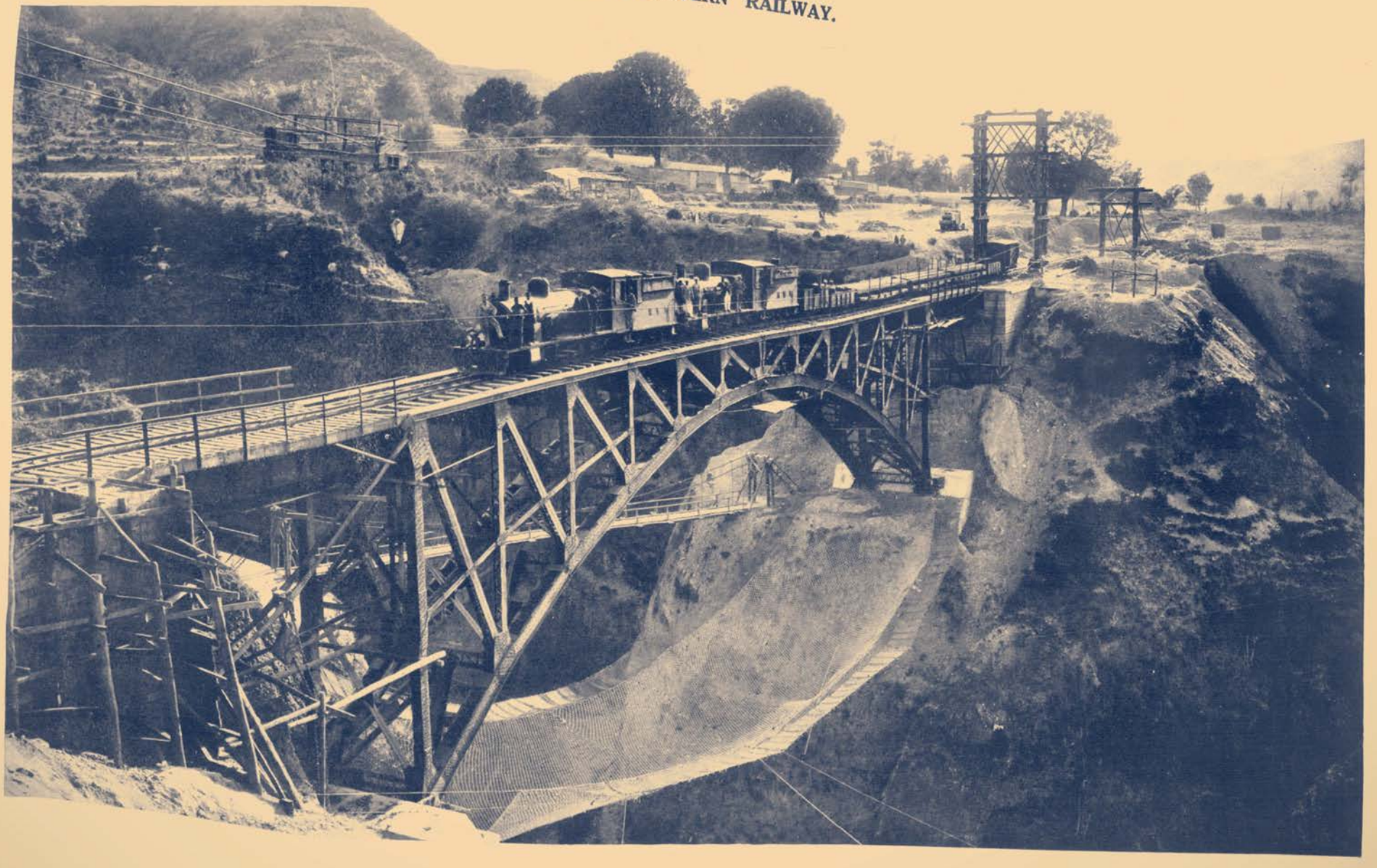
Villupuram-Trichinopoly Railway.—Opening of the Villupuram-Vridhachalam and Vridhachalam-Lalgudi Sections for public traffic in April 1928 and in February 1929, respectively, complete the Villupuram-Trichinopoly Chord line, portions of which had been previously opened in August and December 1927. This line will shorten the distance by rail between Madras and Trichinopoly by 41½ miles. It will open up a fertile tract of country with hitherto poor communication and will relieve the congested main line of the South Indian Railway.

Central India Coalfields Railway.—Daltonganj-Barkakhana section of the Central India Coalfields Railway, which is being constructed by the East Indian Railway on the 5′ 6″ gauge and is 113·38 miles in length, was opened during the year under review. This section will assist in the development of the South Karanpura Coalfields and will open a shorter route for coal to the industrial centres of the United Provinces and the Punjab *viâ* Daltonganj and Moghalsarai.

Dindigul-Pollachi Railway.—The Dindigul-Pollachi Railway on the 3′ 3⅜″ gauge, a length of 75·10 miles, the construction of which was begun in March 1926, was opened for public traffic on the 19th November 1928. The railway will afford Malabar direct railway communication with Southern India, avoiding the congested detour *viâ* Erode and Trichinopoly. It will open up the fertile tract lying immediately north of the Palni and Anamalai Hills and will serve Palni, an important place of pilgrimage.

51. Lines under construction.—The following is a brief account of some of the more important lines sanctioned or under construction

NORTH WESTERN RAILWAY.



Reond Steel Arch on Kangra Valley Railway.

during the year which have not been specially mentioned in previous reports :—

South Indian Railway.

Pollachi-Palghat railway.—The construction of this branch, a length of about 33½ miles on the 3' 3⅜" gauge, was sanctioned in June 1928. This line is in continuation of the Dindigul-Pollachi railway and on completion will afford direct metre gauge connection between Dindigul and Palghat. With the object of avoiding a double change for passengers at Olavakkot and Palghat (the existing Olavakkot-Palghat branch being a broad gauge line), it is proposed to lay third rail between Olavakkot and Palghat. The railway will serve a well cultivated area rich in rice, groundnuts and cotton and will afford facilities for the export of timber from the Nellyambachi and Anamalai Hills and the Cochin State and of coffee and paddy from the interior. The line is expected to be ready for opening by the end of 1930.

North Western Railway.

Sind Left Bank Feeders.—The Sind Left Bank Feeders railway having a total length of 162 miles on the 5' 6" gauge was sanctioned in June 1928. The object of this line is to serve the tract situated on the left bank of the Indus river, which will be irrigated by the Rohri Canals under the new Sukkur Barrage Scheme. The line consists of the following sections :—

	Miles.
1. Nawabshah Tando Adam	54·13
2. Tharushah Sakrand	64·90
3. Mahrabpur Pad Idan	43·07

It is expected that section No. 3 will be opened for public traffic in April 1930.

Assam-Bengal Railway.

Chittagong-Duhazari railway.—A metre gauge line from Sholashahr junction (a station about four miles from Chittagong on the Chittagong-Nazirhat line) to Duhazari, a distance of about 25 miles, was sanctioned in December 1928 at an estimated cost of about Rs. 45 lakhs. The alignment adopted has been influenced by the possibility of a future extension along the coast to Akyab. The project includes a big bridge over the Karnafuli river at mile 4·73 from Sholashahr. The line will serve a prosperous and densely populated area.

Eastern Bengal Railway.

Dacca-Aricha (Rajbari-Narayanganj) railway.—The construction of a broad gauge line, about 64 miles in length, from Rajbari to Narayanganj, including a wagon ferry across the Padma river between Goalundo and Aricha, was sanctioned in January 1929. The line will provide railway communication to the large tract of country in the Dacca District situated between Aricha on the left bank of the Padma (Ganges) river and Dacca. The present means of transport in the area traversed by the railway is mainly by water. The time taken for the railway and river journey between Calcutta and Dacca is about 19 hours and with the advent of the railway the journey will be done in about 12 hours.

The line will be constructed on the broad gauge which will enable the considerable coal traffic to Dacca to be handled without transhipment and the same advantage will be secured to traffic in the reverse direction which is mainly jute.

Mashrak-Thawe (Bengal and North-Western Railway).—This metre gauge line, 39·32 miles long, was sanctioned in June 1928. It links up the

Chapra-Mashrak branch with Thawe on the Saran-Captainganj section, traversing the thickly populated and richly cultivated Saran District, Bihar and Orissa. It will provide transport facilities for the export of sugarcane, the principal product of this area.

52. Important New Works.—*Electrification Schemes.—Electrification of Suburban lines near Calcutta.*—In the last year's report mention was made of this electrification and of the further investigations with the probable development of traffic which it was proposed to carry out. It appears from this examination that electrification will not be financially successful unless the railway can deposit passengers nearer to their places of business in Calcutta. In view of difficulties in regard to the land required for this scheme, and its high cost generally, it has been decided to re-examine an old proposal to connect the suburban systems of the East Indian and Eastern Bengal Railways by means of a tube railway, and investigations are being carried out to ascertain whether a tube scheme is a practical proposition both from the engineering and traffic points of view.

Madras Hydro-Electric Schemes.—During the year under review, the schemes for the Madras Hydro-Electric projects and the electrification of the Nilgiri Mountain railway section of the South Indian Railway were further investigated.

Bombay Electric Services.—In the Report for 1926-27, mention was made of these electric services. During the year under review the following suburban sections of the Great Indian Peninsula Railway were electrified and opened for passenger traffic:—

Thana to Kalyan (Local and through lines).
Kurla to Thana (Through Line).
Byculla to Kurla (Through line).
Victoria Terminus to Byculla (Through line).

The work on the Great Indian Peninsula and the Bombay, Baroda and Central India main line electrifications is nearing completion.

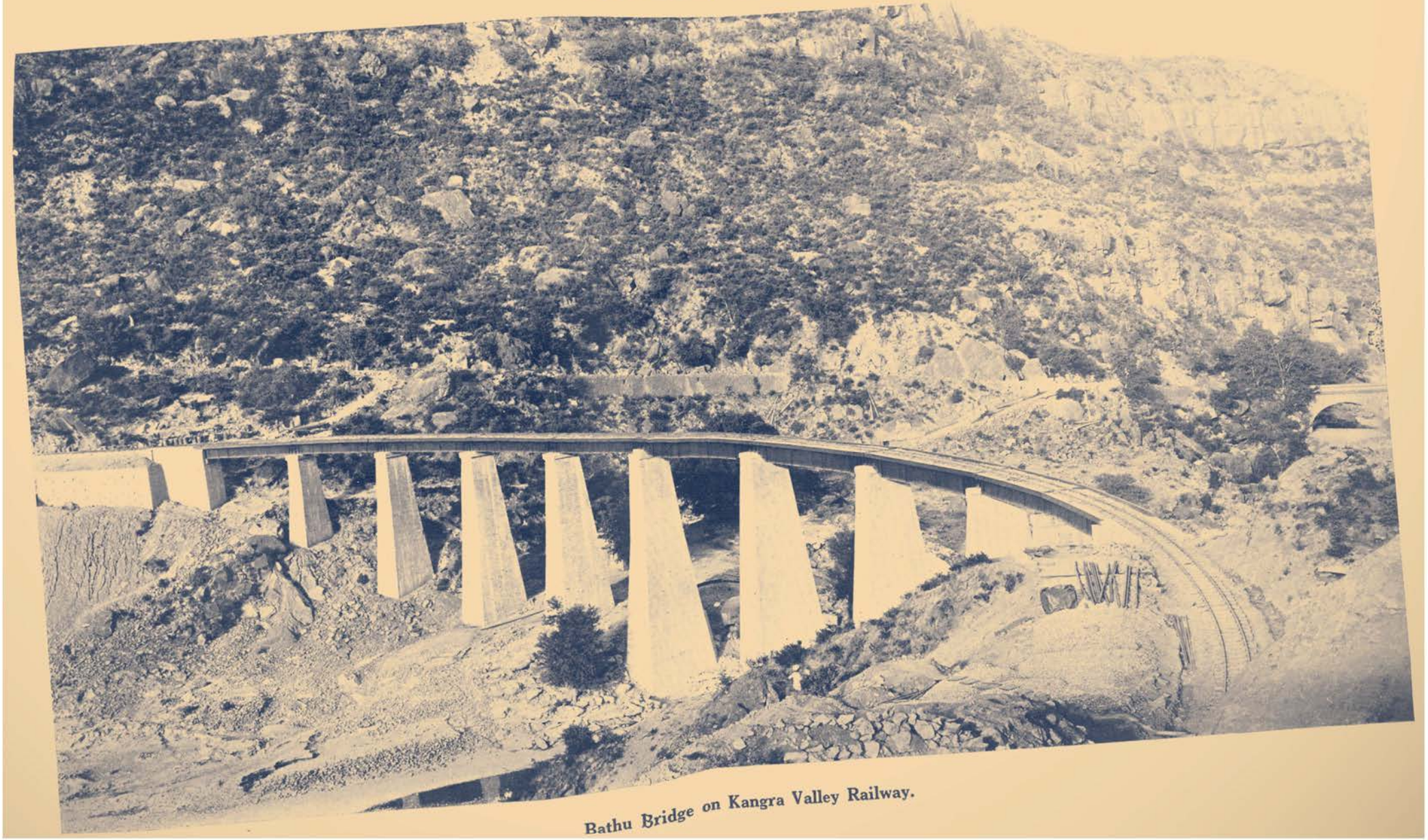
Railway Technical Schools.

Area School at Kot Lakhpat.—It was mentioned in last year's report that the Area School at Lyallpur would move to Kot Lakhpat (near Lahore), where a suitable and inexpensive site had been selected. Work on the construction of the School at Kot Lakhpat is approaching completion. It is expected that the School will close down finally at Lyallpur by the middle of July 1929 and re-open at Kot Lakhpat two months later.

Area School at Gomoh.—An estimate for the construction of the Area School at Gomoh has been received. To secure some saving in initial outlay the Agent has suggested the retention of a school at Asansol for the instruction of Power and Rolling Stock Staff and Switchmen. Whether this arrangement will ultimately prove more economical than one combined school at Gomoh is under examination.

Railway Staff College, Dehra Dun.—Work on this scheme, which was mentioned in paragraph 80, Volume I, of the Report by the Railway Board on Indian Railways for 1927-28, continued to make good progress and it is hoped that the College will be opened early in 1930.

Vizagapatam Harbour.—Good progress was made with the work on the Vizagapatam Harbour construction. The Suction dredger, "Vizagapatam", has been working chiefly in the turning basin, the excavation of which, by double shift working, has proceeded satisfactorily. All excavated material has been dumped into the area lying between the Harbour and the town of Vizagapatam. Stone bund work was completed on the lines of the approved scheme for the oil depot, and the bund cutting off the Vizagapatam



Bathu Bridge on Kangra Valley Railway.

drainage channel from the main reclamation was also completed. All monoliths for the wharf wall were sunk and concreted, and the upper wall was constructed throughout. Good progress was made with the construction of the dry dock. Excavation over the greater portion of the dock was completed and the masonry walls on the south end finished. A sufficient number of the permanent staff quarters has been built to supply the needs of the construction staff. Work in connection with anti-malarial measures is well in hand. A reference was made in the last year's report to the administration of the port during the construction period. In accordance with the decision made by the Government of India, the administration of the port was transferred to the Administrative Officer, Vizagapatam Harbour Construction (the Agent, Bengal Nagpur Railway) and the Port Officer, Vizagapatam, was withdrawn.

Drainage Channel for the Kadu Lake, Burma Railways.—The Kadu Lake which lies west of the railway at miles 404-405 Mu Valley Branch, Burma Railways, was formerly about 3 square miles in area and about $1\frac{1}{4}$ miles distant from the line. The lake has no natural outlet. The heavy rainfall in 1927 increased its area to 15 square miles and again in 1928 excessive rainfall further increased it to 70 square miles, at the same time submerging the line by 12 inches for a distance of over 2 miles and bringing traffic to a standstill in August 1928. The track was raised 21 inches on stone boulders in September 1928, but was again submerged by 8 inches by further rain in October 1928 and since then traffic has been moved over the submerged portion only with difficulty. It was decided to make a drainage cut some 5 miles in length and in places over 40′ in depth to drain the lake towards the Irrawaddy river. The cost of this cut is expected to be about Rs. 12 lakhs and work was started in February 1928 and is progressing. It is hoped that when completed the cut will keep the water level of the lake down to the bottom of the railway embankment.

53. Open line improvements.—The more important open line schemes which were completed during the year under review are detailed in the following paragraphs :—

Assam Bengal Railway.

At 22 stations the crossing loops were increased to give a clear length of 1,500 feet.

Bengal and North-Western Railway.

One Arc welding plant was erected during the year and one softening plant was under erection.

The schemes for supply of electricity at Sonepore, Gonda and Samastipore were nearing completion, and the work of lighting Chupra Station was practically finished.

Bengal Nagpur Railway.

A heavy programme of relaying and re-sleepering was in progress during the year. The relaying consisted in :—

(*a*) Completing the substitution of 85 lb. track on the Howrah-Khargpur Section by 90 lb. track.

(*b*) Replacing 75 lb. track by 85 and 90 lb. track on the East Coast line between Waltair and Jagannadhapuram.

(*c*) Replacing 75 lb. track by 90 lb. track between Sudamdih and Bhowrah Block Hut in the Colliery District.

The re-sleepering consisted generally in substituting metal sleepers for ordinary wooden sal sleepers and steel trough sleepers of the peapod pattern. The metal sleepers used were either steel troughs reinforced with saddle plates or cast iron plate sleepers of the universal type and short lengths of the W. M. and L. K. types. In addition, a small amount of the Pot sleeper road on

the main line between Chakardharpore and Garpos was strengthened by the addition of three sleepers per rail length, thereby increasing the number of Pot sleepers for a 36 feet rail from 12 to 15.

The replacing of understrength girders has proceeded according to programme. Between Asansol and Nagpur 27—60 feet spans, 9—20 feet spans and 1—12 feet span were completed during the year.

At five stations signals and points were interlocked, and at eighteen stations the interlocking arrangements were altered to provide for the isolation of running lines.

Bombay, Baroda and Central India Railway.

The tracks between Colaba and Church Gate were re-spaced and automatic signalling was installed in this section. Tracks were also re-spaced and 1′ 2″ high platforms provided at four stations on the Anand-Godhra branch. Tracks were also re-spaced and the loop sidings extended at two other stations.

The loops at certain stations on the Nagda-Muttra section were isolated, and starters interlocked with block instruments at seven stations on the system.

Girders of 20 feet clear span and under on the Colaba-Ahmedabad section were replaced, and the piers of seven bridges strengthened.

Satisfactory progress was made in connection with the work of providing a central station in Bombay. The foundations of the station building were completed in June 1928, and since then the more important works completed were :—

(*i*) The superstructure of the south and north-east blocks up to first floor level.

(*ii*) The foundation work for the columns of the platform sheds.

(*iii*) Sewerage work and storm water drainage system.

(*iv*) Platform walls and earth filling for the Central station building.

Electric lights and fans were provided in the station buildings, offices, yards, etc., at Rewari.

The renewal of girders on the Nasirabad-Neemuch section was in progress, and most of the spans up to 40 feet have been completed.

Burma Railways.

Remodelling of stations and Yards at Yamethin, Pyinmana, Insein and Pegu was practically completed during the year.

Eastern Bengal Railway.

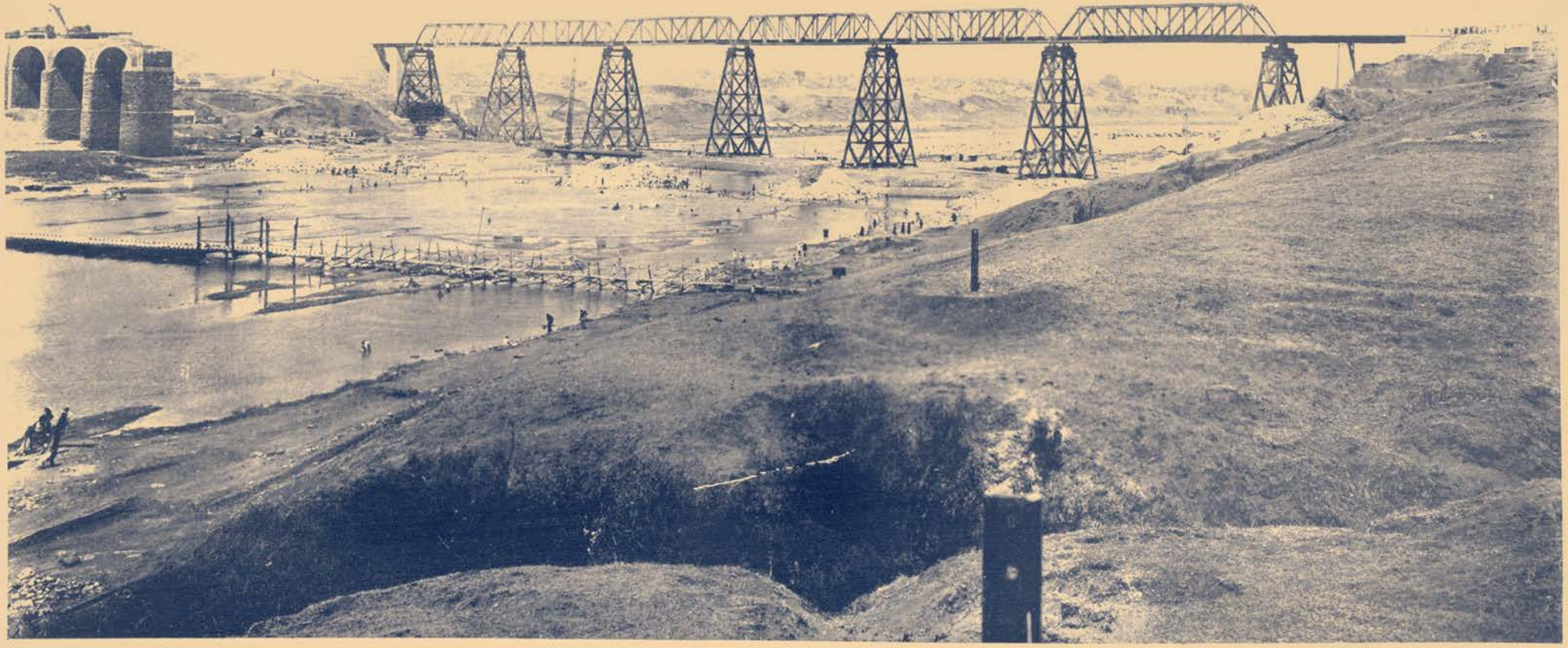
The remodelling of Jhikargacha Ghat Yard and the installing of standard type signalling and interlocking arrangements at the Ghat, as also Phase II of the Sealdah remodelling were completed.

Starting signals were interlocked with Neale's instruments at all stations on the Dum-Dum Junction-Khulna section and at eight stations on the Ishurdi-Santahar section. Four stations were interlocked, and revised interlocking arrangements introduced at three others.

The programme of isolation of running lines was completed at all stations, except one, on the broad gauge section, and at 41 stations on the metre gauge section.

Train control was brought into use on the Saidpur-Siliguri section, adding 76 miles to the broad gauge section now under train control. On the 31st March 1929, 66·5 per cent. of the route mileage on the broad gauge and 22·8 per cent. of the route mileage on the metre gauge were under train control.

GREAT INDIAN PENINSULA RAILWAY.



Nerbudda Bridge.

The renewal of weak girders was completed on 10 bridges on the broad gauge and 14 on the metre gauge. In addition, 6 bridges on the broad gauge were strengthened by new web stiffeners in order to bring them up to XB class engines. The rebuilding of the piers and abutments of five metre gauge bridges was completed, as also was the building of guide bunds of two rivers in the metre gauge area. Two new metre gauge bridges were built during the year—one in replacement of timber piles over the Putimari, and the other between Jaydebpur and Rajendrapur on the Dacca section. The rebuilding of the Jaboona and Bhetna bridges, referred to in last year's report, was in progress during the year, and the construction of a guide bund at the Champamati river was in hand. With the exception of 1—100 feet span, 3—80 feet spans and 3—75 feet spans, most of this work related to girders of 40 feet span and under.

East Indian Railway.

Station Buildings.—New station buildings were under construction at Cawnpore and Baidyanath Dham. Special architectural designs are being worked to in both these places to suit local conditions. A new station building on the island platform was also taken in hand at Asansol.

Station Yards.—A heavy programme for remodelling station yards to make them fit to deal with the present day traffic was in hand during the year. The following are the more important stations undergoing remodelling :—

Asansol down yard.
Moghal Sarai up yard.
Cawnpore.
Dhanbad.
Jherriah.
Ondal down departure yard.
Moradabad (both Traffic and Locomotive yards).
Rosa Locomotive yard.

The engine round house at Moradabad was brought into use.

Other Works.—To improve facilities for dealing with heavier traffic, a second Up line from Asansol to Sitarampur and a second Down line from Barakar to Asansol were being put in, and the doubling of the Grand Chord line between Gaya and Moghal Sarai was completed and brought into use. On the Fyzabad loop, certain station yards were extended so as to take loads of 72.

Seven additional crossing stations were put in on the Moradabad Division, where also the work of nine miles of re-alignment, to avoid a steep grade in the neighbourhood of Bundki, was nearly completed.

The isolation of the running lines on the Fyzabad loop was completed.

Important work involving the safety of the line was carried out between Lhaksar and Roorkee, necessitating extensive training works in the beds of the Solani and Ratmau rivers.

The old girders carrying the up track over the Jumna river at Allahabad which were brought into use in 1865, are being replaced by new girders and the work has made good progress. 93 spans carrying the up track of the Upper Sone bridge, which was opened in 1900, have been strengthened. Girders of the down track of the Lower Sone bridge, opened in 1862, are being replaced by up-to-date girders. Another set of girders has been erected on the new Ganges bridge at Cawnpore enabling the metre gauge track to be removed from the old Cawnpore Ganges bridge, which was constructed in 1875. In addition to these, a large number of 60 feet, 40 feet and 30 feet girders have been renewed on the main line, released girders being put into loop and branch lines in replacement of weaker girders which involved heavy running restrictions.

Under the heavier and faster traffic now running on the line certain of the older masonry arch bridges and culverts have shewed signs of failure and a considerable number of these have had to be rebuilt. The most important of such bridges is the Boman viaduct consisting of 280 spans of 12 feet arch which was rebuilt for a width of 38 feet 3 inches throughout the entire length.

Great Indian Peninsula Railway.

The rebuilding on a new alignment of the Nerbudda bridge which was washed away by high floods in September 1926 was completed, and the Bara Town, Anjan, Oolhasa and Basta bridges, as also the Shahapura viaduct, were also rebuilt.

The remodelling of Victoria Terminus yard and the work of providing a new station building for main line traffic were also completed.

The reversing station at Bhore Ghat was eliminated by the adoption of a new alignment between Karjat and Khandala.

Jodhpur Railway.

The remodelling of Degana and Luni Junction Yards, as well as the transhipment yard and stock sidings at the latter, have been completed. The lines at seven stations were extended to the new standard length and provided with rodded cross-overs.

The programme of isolating running lines on the main line and of providing Warner signals was completed from Luni Junction to Marwar Railway Junction and from Kuchaman Road to Hyderabad, with the exception of the Chhor-Mirpurkhas section where the work was held up pending a decision on the conversion to broad gauge of the Jodhpur Hyderabad section.

The control system was brought into use between Luni Junction and Munabao.

Madras and Southern Mahratta Railway.

The salt depot at Tondiarpet was ready for handing over to the Salt Department in May 1928, but was not actually taken over by that department till 1st March 1929. The earthwork of the Marshalling Yard at the same station was about 30 per cent. completed and the laying of the permanent way was well in hand.

His Exalted Highness the Nizam's Guaranteed State Railways.

The roofing of the island passenger platform at Hyderabad (metre gauge), as also the remodelling of the Locomotive shops were completed. The steam power plant in the machine shop was replaced by electric motors, and electric cranes were erected.

North Western Railway.

The remodelling of stations and yards at the following stations were either completed or in progress during the year:—

Amritsar, Drigh Road, Karachi Cantonment, Jacobabad, Chak Pirna, Mach, Panipat, Kalka, Ambala Cantonment, Kurukhshetra, Kharian, Narowal, Kotri, Peshawar Cantonment and Rawalpindi.

The girders of the following bridges were renewed:—

(*i*) Jhelum Bridge at Jhelum (50 spans of 90 feet each).

(*ii*) Ghaggar Bridge between Ambala and Kalka (14 spans of 100 feet each).

Lower Jhajra Bridge between Ambala and Kalka, (3 spans of 100 feet each).

Remodelling of Victoria Terminus Yard—"Work in Progress."

The shortening of the Sutlej Bridge at Adamwahan from 16 to 8 spans of 250 feet each was completed, and arrangements are now in hand for replacing the present single track girders by new double track girders. A new adequately protected guide bund was constructed at the left abutment.

Thirty-five stations were interlocked, and at 11 stations the interlocking arrangements were re-modelled. Running lines were isolated at 122 stations.

South Indian Railway.

The work of renewing weak girders on the Tanjore Trichinopoly section with girders suitable for standard metre gauge II loading was completed.

Considerable progress was made in the carrying out of the scheme for improvements in the Madras Suburban area. In this connection, the re-building of the Adyar and Cooum bridges to take four tracks was completed. Good progress was also made on the scheme for the conversion of the Erode branch from the metre to the broad gauge. In the Central Workshops and Town scheme, the work in the Engineer's Shop, Pattern Shop, Millwright and Electrical Shop, Forge and Smithy Shop, Stripping Shop, Erecting and Coppersmith Shop, Trial Engine Shed and Tender and Boiler Shop was completed.

54. The *regimé* and changes of ghats and river erosion on the Eastern Bengal Railway.—The usual difficulties were experienced at all Ghat stations during the year. These are inevitable in the special conditions of the Bengal rivers with their ill-defined banks and easily erodible beds. The Administration have taken steps, however, to compile a life history of each ghat in order to collect data which will be of assistance in designing engineering works with the least possible outlay of money. To this end also an aerial survey of the *regimé* of certain of the rivers in the plains was carried out during the cold weather of 1928-29 through the agency of the Indian Air Survey Transport Co., Ltd. These surveys, covering as they do, long reaches of a river, give a more comprehensive view of its *regimé* and thus enable the Engineers to form a more accurate idea of how the general position is likely to develop at any particular ghat site than is possible with the usual trigonometrical survey. It is expected that the results obtained from them will be of assistance in circumscribing within narrower limits the engineering expenditure at ghats.

CHAPTER IV.

TRANSPORTATION AND WORKING.

55. Statistics of working.—The business handled by railways naturally tends to increase year by year: the rate of increase being dependent on numerous factors. The following table shows how the amount of traffic, expressed in terms of passenger and ton miles, which Class I Railways had to carry, has increased during the year, as compared with the previous two years. These figures, which do not include materials and stores carried in departmental trains, *i.e.*, trains run by railways for their own purpose, represent about 97 per cent. of the total traffic carried on all Indian Railways.

Particulars.	In thousands.			
	1926-27.	1927-28.	**1928-29.**	Percentage increase or decrease compared with 1927-28.
Passenger miles	19,603,413	20,908,343	**21,247,570**	+1·62
Net ton miles	19,606,182	21,111,127	**21,151,844**	+0·19

(*b*) In order to carry this traffic the following mileage was run by traffic trains:—

Particulars.	Class I—Railways, Broad Gauge (in thousands).				Class I—Railways, Metre Gauge (in thousands).				Class I—Railways, Narrow Gauge (in thousands).			
	1926-27.	1927-28.	1928-29.	Percentage of variations with 1927-28.	1926-27.	1927-28.	1928-29.	Percentage of variations with 1927-28.	1926-27.	1927-28.	1928-29.	Percentage of variations with 1927-28.
Passenger train miles .	56,211	59,893	62,243	+3·92	16,452	17,467	18,713	+7·13	454	559	751	+4·35
Goods train miles . .	40,594	42,679	43,342	+1·55	14,600	15,067	15,892	+5·48	822	846	964	+13·95
Mixed train miles. .	6,310	6,308	6,828	+8·24	16,713	17,160	16,792	—2·14	1,830	1,847	1,904	+3·09

(*c*) In addition to the train services mentioned above, a large amount of directly unproductive or "other" engine miles, *viz.*, shunting, light and assisting have been run. This mileage was equivalent to about 20 per cent. of the traffic engine miles. The departmental train mileage, which is also unproductive, amounted to 1·43 million miles, or about 7 per cent. of the traffic engine miles.

(*d*) Of the unproductive mileage, shunting mileage is the one affording the greatest scope for a reduction. Its proportion per hundred train miles for the last three years compares as follows on broad and metre gauges:—

Particulars.	Broad Gauge.				Metre Gauge.			
	1926-27.	1927-28.	**1928-29.**	Percentage of variations with 1927-28.	1926-27.	1927-28.	**1928-29.**	Percentage of variations with 1927-28.
Shunting miles per 100 train miles (Passenger and proportion of mixed).	5·62	5·25	**5·29**	+0·76	5·64	5·49	**5·48**	—0·18
Shunting miles per 100 train miles (Goods and proportion of mixed).	39·7	38·0	**36·9**	—2·89	31·8	32·4	**32·8**	+1·23

Goods trains.—The average through speed of goods trains, which is the average speed of a train from start to finish of its run inclusive of stops *en route*, remained practically the same as last year, *viz.*, 9·9 miles per hour on the broad gauge and 9·5 on the metre gauge. The average net load of a goods train decreased from 390 to 383 tons on the broad gauge and from 164 to 161 tons on the metre gauge. The final index of goods train working, *viz.*, " net ton miles per engine hour," shows a decrease from 1,665 to 1,641 net ton miles on the broad gauge and from 759 to 748 on the metre gauge.

Engines.—The work done by engines is expressed by the figure " Engine miles per engine per day." Based on the number of engines on the line, this figure shows an increase on the broad gauge from 66·1 to 69·7 and on the metre gauge from 69·2 to 69·9. Based on the number of engines in use, the number of engine miles per engine per day has risen on the broad gauge from 102 to 104, but on the metre gauge it was the same as last year, *viz.*, 102. At the same time the percentage of engines under or awaiting repairs has again decreased from 20·6 to 20·0 on the broad gauge, while remaining stationary at 17·7 on the metre gauge. This means that ·5 per cent. more engines were available for use on the broad gauge, the equivalent of 30 broad gauge engines.

Wagons.—The amount of work got out of the available wagon stock is expressed either in the average number of miles run per wagon per day, both loaded and empty wagons being taken into account, or in the average number of net ton miles performed by a wagon per day. It should, however, be noted that in the case of both statistics, the figures indicate the work done by the total number of wagons on railways and not only by the wagons actually in use, as all empty wagons are also taken into account, whether running or lying excess in sidings. The following table shows these two results for 1928-29 compared with the previous year :—

—	Wagon miles per wagon day.		Net ton miles per wagon day.	
	1927-28.	1928-29.	1927-28.	1928-29.
Broad Gauge	34·8	37·3	311·2	328·5
Metre Gauge	31·5	31·2	156·0	153·3

The average percentage of unserviceable wagons to the total number of goods wagons shows an increase from 5·46 to 6·53 per cent. This increase occurred wholly on the broad gauge, as on the metre gauge the percentage fell from 4·06 to 3·92.

Passenger vehicles.—Similar figures with regard to repairs of passenger vehicles show a decrease from 11·38 to 10·96 per cent. on the broad gauge and remained stationary at 9·9 on the metre gauge. This represents a saving of 43 broad gauge carriages.

56. Turning to individual railways some of the principal features of the year's transportation working are as follows :—

Bengal Nagpur Railway.

The net ton miles per engine hour has advanced from 1605·4 in 1927-28 to 1651·3 in 1928-29.

The average load of a train increased from 40·5 wagons in 1927-28 to 41·9 in 1928-29 : the average number of loaded wagons per train also increasing from 27·4 in 1927-28 to 29·0. The net load in tons per goods train consequently improved from 407·5 to 423·0.

Eastern Bengal Railway.

The following table shows the substantial reductions that have been made in recent years in the average cost per broad gauge vehicle repaired:—

	Years.		
	1926-27.	1927-28.	1928-29.
	Rs.	Rs.	Rs.
Passenger vehicles . . .	841	453	**329**
Other coaches	403	279	**192**
Wagons	166	158	**136**

Great Indian Peninsula Railway.

The principal features of the operating statistics have been an appreciable increase in the passenger train miles and a decrease in the goods train miles as compared with the previous year. The latter was due principally to the re-opening of the route *viâ* Jubbulpore from the 1st June 1928, on completion of the new Nerbudda bridge, which has reduced the lead of traffic previously carried by an alternative longer route. The policy of carrying coal by the shortest route between the source of supply and the station where required has also contributed to the reduction in the freight ton miles.

Jodhpur Railway.

The total gross ton miles amounted to 583,840,417 in 1928-29 as against 539,593,176 in 1927-28, or an increase of 8·20 per cent, whereas the total quantity of coal consumed on all services was 46,970 tons in 1928-29 against 44,937 in 1927-28 or a rise of 4·52 per cent.

North-Western Railway.

Shunting miles per 100 passenger train miles rose from 5·96 to 6·21, while the figures per 100 goods train miles were appreciably reduced, *viz.*, from 37·1 to 32.

A substantial improvement in the engine user figures will be observed from the following comparative statement:—

—	1926-27.	1927-28.	1928-29.
Engine miles per day per engine in use	97·1	101·0	**102·2**
Engine miles per day per engine on the line . . .	55·8	64·7	**71·1**

The net ton miles per locomotive day increased from 10,740·5 in 1927-28 to 11,827·7 in 1928-29.

South Indian Railway.

The figures of wagon miles per wagon day compare unfavourably with the figures for previous years. In 1925-26, the figures were 38 for the broad gauge and 35·9 for the metre gauge, whereas for 1928-29, the corresponding figures were 34·1 and 29·0. The decrease on the broad gauge is mainly due to the shorter lead of the traffic moved during the year, and on the metre gauge to the increase in the wagon stock. Other factors contributing to these results have been:—

(*a*) a falling off in the average speed of goods trains from 11·1 in 1927-28 to 10·6 in 1928-29 on the broad gauge, and 9·43 to 9·16 over the metre gauge;

(*b*) an increase in the percentage of wagons under or awaiting repairs;

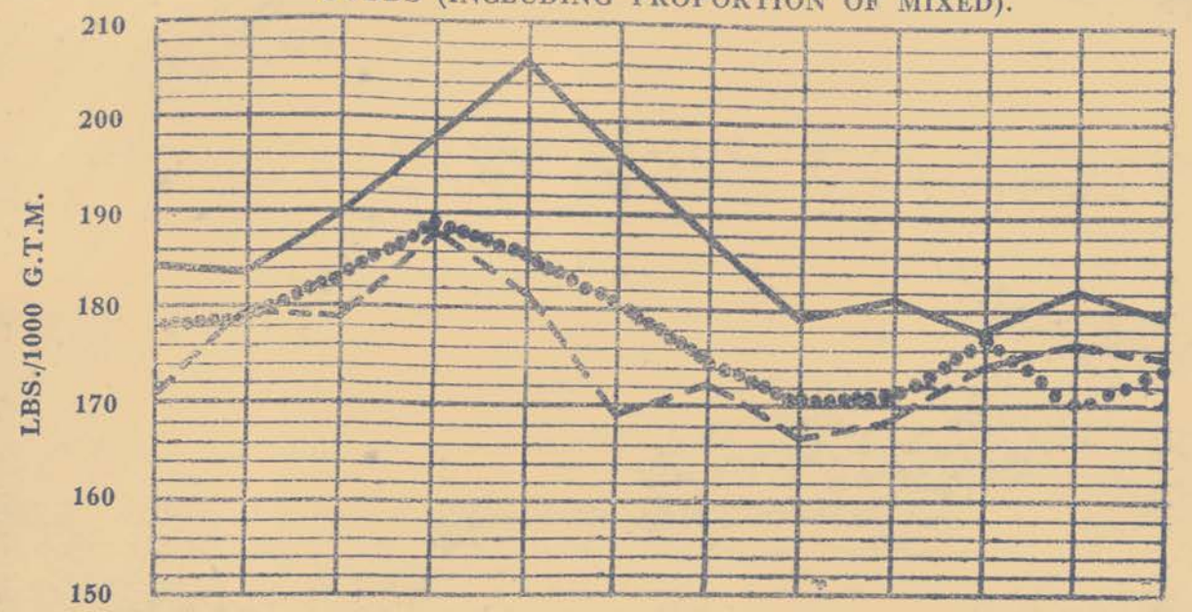
(*c*) the strike which occurred on the South Indian Railway in 1928.

5'-6" GAUGE.

1926-27 ———
1927-28 .....
1928-29 – – – –
1929-30 + + + +

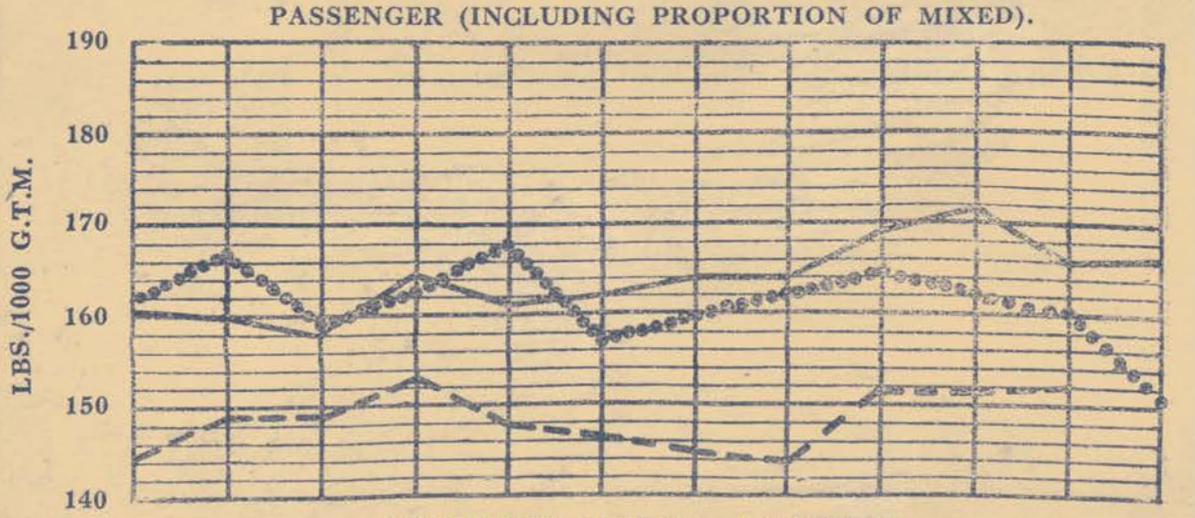
GREAT INDIAN PENINSULA RAILWAY.

GOODS (INCLUDING PROPORTION OF MIXED).



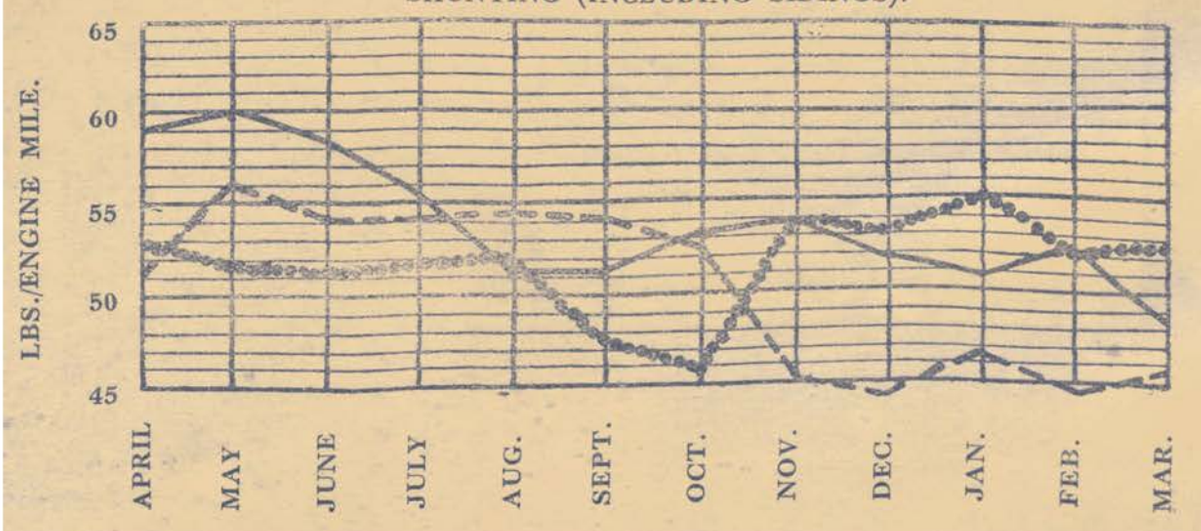
EAST INDIAN RAILWAY.

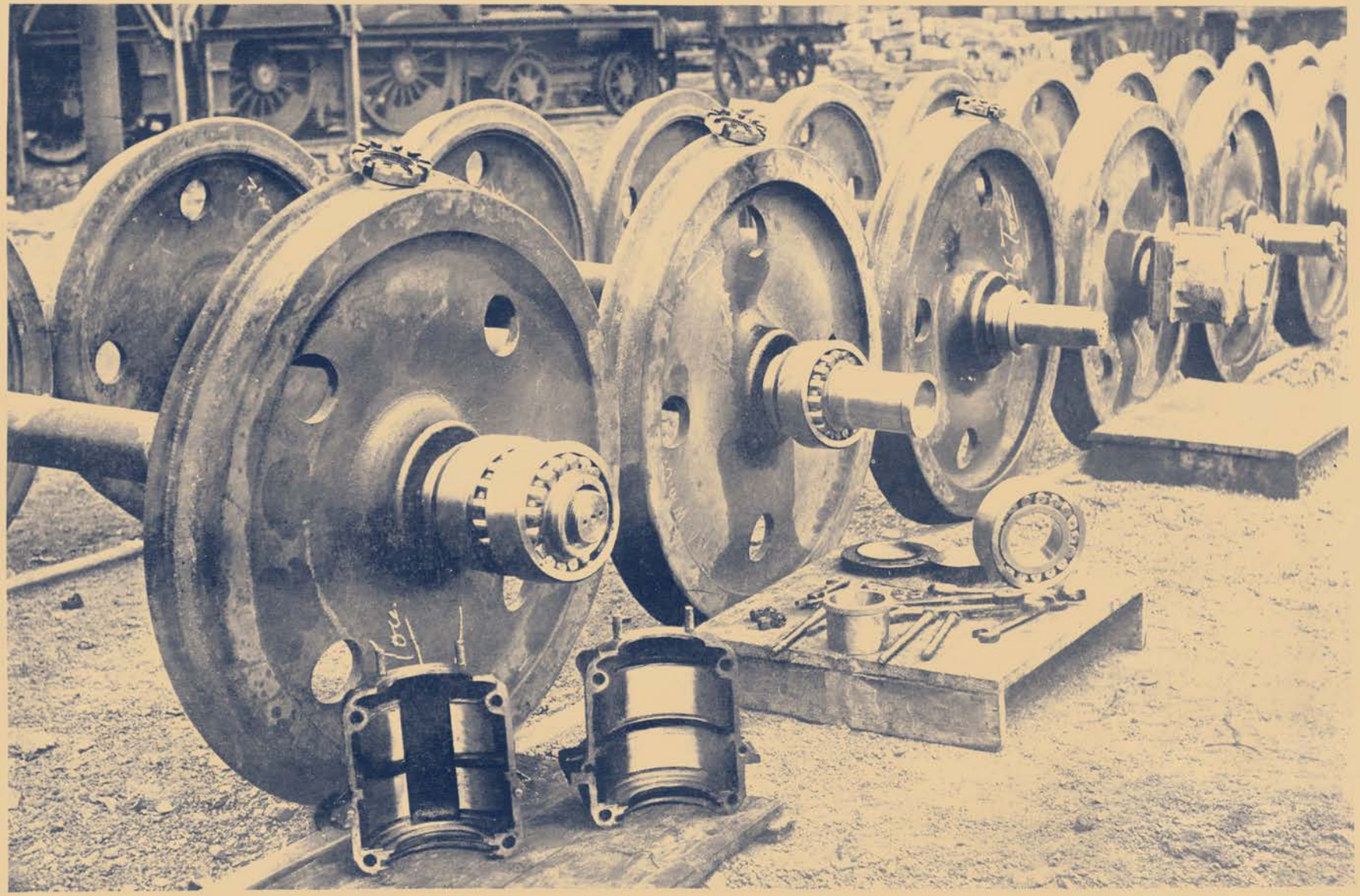
PASSENGER (INCLUDING PROPORTION OF MIXED).



EASTERN BENGAL RAILWAY.

SHUNTING (INCLUDING SIDINGS).





Skofko Roller Bearings for a Suburban Rake.

Efficiency.—The figures of " net ton miles per engine hour " for the past three years, as given below, show a decrease in the year under review :—

	Broad gauge.	Metre gauge.
1926-27	935	566
1927-28	882	578
1928-29	**821**	**547**

In calculating this figure the total engine hours including ballast engine hours were taken. As, however, during the last three years there was a large increase in the number of ballast trains run for the various Engineering Works, figures were also worked out eliminating " Departmental " engine hours from the total engine hours, with the following results :—

	Broad gauge.	Metre gauge.
1926-27	1,222	750
1927-28	1,139	769
1928-29	**1,070**	**732**

These figures also indicate a falling off on both gauges, which is due to a decrease in the average speed of goods trains, and to an increase in unproductive working. The falling off on the broad gauge was also partly due to the shorter lead of the traffic moved during the year.

57. Fuel Economy.—Since the Standing Committee referred to in the 1927-28 Report was constituted, the State-managed railways have recruited the necessary staff and established a permanent working organisation. The results have been uniformly successful and the extent of success may be comprehended from the graphs (reproduced on the facing page) which illustrate some of the results obtained by various State-managed railways on selected services.

The Standing Committee continues to hold its six-monthly meetings with the Fuel Officers. The Chief Mining Engineer, together with a Statistical Officer from each of the railways, also attend these meetings. Besides bringing a large number of technical questions under examination, much time and attention has been given to the compilation of domestic fuel statistics, for it was realised at an early stage that accurate records would be essential to gauge the progress of the fuel campaign. It transpired that certain inaccuracies and differences in compilation existed. The domestic fuel statistics differ in certain respects from the inter-railway fuel statistics published by the Railway Board, inasmuch as they require to be made available almost immediately after the periods to which they refer, being used to a great extent to correct mechanical and other defects leading to inefficient use of fuel.

The Burma Railways, which was brought under State management from January 1st, 1929, possesses no separate fuel economy organisation. It was decided that this railway should submit half-yearly reports on the subject similar to those already submitted by the other State-managed railways so that information could be collected on which it could be decided whether it would be desirable to start such an organisation.

With the object of co-ordinating the work of Fuel and Statistical Officers, six-monthly meetings are convened at selected centres of interest. These meetings afford opportunities to these officers to become acquainted with the practice on other railways and enable a large number of details concerned with the preparation of statistics and methods of measurements to be settled direct. The following paragraphs detail briefly what was done in regard to fuel economy during the year under review on some of the principal railways :—

Eastern Bengal Railway.—The campaign was vigorously prosecuted during the year, special attention being paid to obtaining greater accuracy in calibration and more comprehensive and up to date statistics. Additional grab coal cranes were obtained for the broad and metre gauges with the object of securing economy in working and independence of coolie labour.

East Indian Railway.—The year under review was the first during which the fuel economy campaign was extended over the whole line. The campaign was opened on the Allahabad Division in November 1926, and then extended gradually over the whole system, the lower Divisions of Asansol and Howrah being the last to come into the scheme.

Great Indian Peninsula Railway.—Special attention was paid to receipt, storage and accounting of fuel, condition and equipment of engines and the training of personnel.

Madras and Southern Mahratta Railway.—The coal consumption per 1,000 gross ton miles increased during the last two years. The reason for this increase is attributed directly to the poor maintenance of engines under the engine pooling system as introduced.

North Western Railway.—Arrangements made to distribute locomotive fuel from Ghaziabad have proved successful. There has been a steady improvement in the coal consumption figures and further decided improvements are confidently anticipated.

South Indian Railway.—The coal consumption on broad and metre gauge passenger services showed an improvement and the standard previously reached for the broad gauge goods services has been maintained. The strike in July adversely affected the fuel performance owing mainly to a consequent shortage of engines in a good state of repair, resulting in the introduction of pooling and a further lowering of the standard of maintenance.

58. Running of passenger trains.—The improvement in the punctual running of passenger trains on the broad gauge, to which reference was made in the last year's report, has been maintained. Although the percentage of trains not losing time shows a falling off under mail and mixed trains, the percentage for all trains has gone up from 76·4 in January 1928 to 76·8 in January 1929. Under metre gauge there has been substantial improvement in the running of all kinds of passenger trains, the percentage of trains not losing time going up from 65·8 in January 1928 to 72·1 in January 1929.

Percentage of trains not losing time to total number of trains run.

—	All trains.	Mail and important through trains.	Mixed trains.	Suburban trains.	Other passenger trains.
Broad Gauge.					
January 1928	76·4	67·4	78·4	78·5 89·3*	76·2
January 1929	**76·8**	**66·4**	**77·8**	**78·7** **90·1***	**77·7**
Metre Gauge.					
January 1928	65·8	56·8	64·8	77·7	59·9
January 1929	**72·1**	**71·5**	**72·1**	**87·2**	**61·9**

* Great Indian Peninsula Railway Electric trains.

59. Bombay Electric Services.—*Great Indian Peninsula Railway.*—The following progress was made in the extension of the electrified services :—

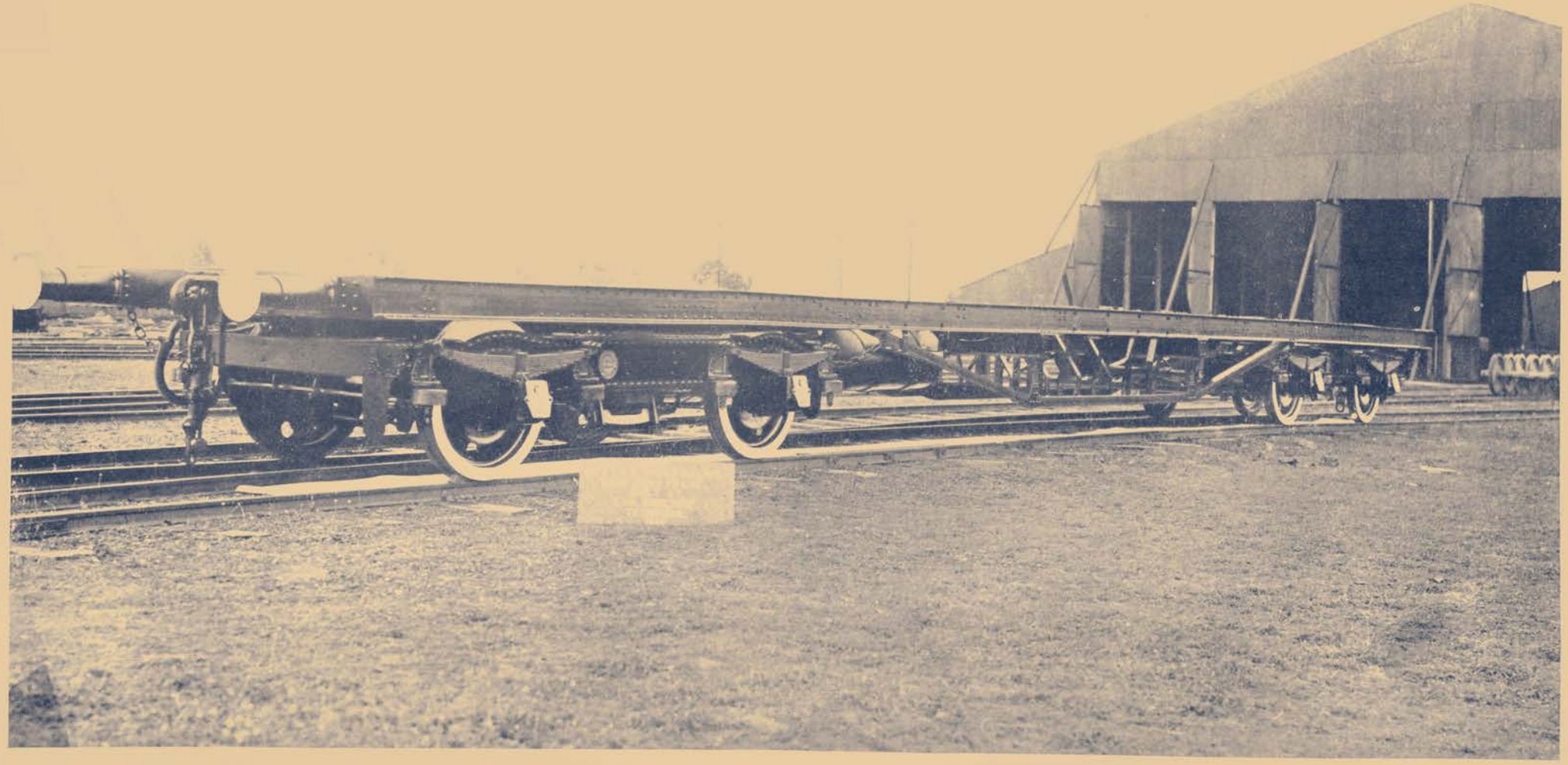
Byculla to Kurla (Through line) opened on 17th September 1928.

Bombay to Byculla (Through line) opened on 12th November 1928.

Kurla to Thana (Through line) opened on 12th November 1928.

Kurla to Thana (Local and Through lines) opened on 12th November 1928.

Thana to Kalyan (Local and Through lines) opened on 12th November 1928.



68″ Broad-gauge Under-frame built at East Indian Railway Workshops, Tatanagar.

Inspection and repair shops.—The New Car Shed at Kurla has been taken over during the year, the inspection side being occupied on 1st September 1928, and the Repair Shop side on November 1st. The New Repair Shed for Electric Locomotives at Kalyan was occupied on 12th November 1928 and the equipment of the shed was nearing completion at the end of the year.

Electric Passenger Locomotives.—During the year three different makes of locomotives were received and after trial the most suitable type was selected subject to certain modifications. The balance of the order for 21 locomotives has been arranged accordingly. There were three Electric locomotives of the passenger type in operation at the close of the year.

Electric Goods Locomotives.—The first of these locomotives ran trials from 28th April 1928 and was put into regular work on 21st May 1928. To date 9 of these locomotives have been handed over for service.

The demand for electric current from Tatas was below the guaranteed minimum from April to November inclusive; from December it has exceeded the minimum. Tata's supply to the Traction sub-stations failed 11 times during the year: the aggregate duration being 17 minutes. The maximum duration of any one failure was four minutes.

Faults.—There were 46 faults on the overhead equipment during the year. 19 were caused by birds, 7 were due to breakage and flashing over of cross span insulators, 2 to accidental earthing of the line, 5 to cross over knuckling arrangements being out of adjustment, 3 to locomotives or units being diverted into unwired tracks, 2 to lightning, 1 to leakage from a water main, 1 to a defective section insulator, and 6 to unknown causes, of which 2 were probably defective pantographs.

Gears.—Breakages to gears on motor coaches were 80 during the year. All the original gears have now been replaced by a new type and no gear breakage has occurred since 14th March 1929. In all 132 gears were changed during the year. The gear used for this replacement is of the solid type (*i.e.*, the teeth are cut on solid blanks and not on separate rims). They have not yet run a sufficient mileage to prove definitely that they will stand up to requirements, but there is reason to believe that this may be so.

Bombay, Baroda and Central India Railway.—During the year details of equipment incomplete at the commencement of the period were completed and pressure tests carried out at 12,000 volts on all the sections of the overhead equipment. On one or two occasions the equipment failed to withstand the test voltage and considerable dislocation of the train service ensued. The maintenance of the overhead equipment was taken over from the contractors from July 1928.

Sub-stations.—With the exception of the 1,500 volts Direct Current gear, which has since been condemned by the Consulting Engineers and is being replaced, the maintenance of sub-stations was taken over from the contractors:—

Kandivlee and Bandra sub-stations	October 1928.
Grant Road sub-station	March 1929.

Electric Locomotives.—Two Storage Battery Locomotives were received for shunting in the Carnac Bridge Goods Yard and placed in service in October 1928. Since then they have been working regularly.

Coaching Stock.—During the year 21 four-coach electric train units were conditioned and completed. 10 four-coach train units were received from Home to complete the full complement of 40 train units. 22 units were placed in service during the year, thus bringing the total number of units in service on 31st March 1929 to 37.

Power supply.—A total number of 1,680,723 unit train-miles were run by the electric trains during the year. The average consumption of electric energy was 16·5 units per four-coach train-mile.

A total of 30,252,200 Board of Trade units were received from the Tata Power Company, which were utilised for the following purposes.

	Units.
Electric Traction	27,423,223
Locomotive Workshops, Parel	2,179,827
Power lighting and other auxiliary purposes . .	649,150

Faults.—Much trouble was experienced during the year in all three sections of the electric traction equipment, *viz.*, sub-stations, overhead equipment and rolling stock. The more serious trouble occurred in the sub-stations. It has since been decided that most of the trouble was due to the 1,500 volt Direct Current switchgear being of an unreliable nature and the whole of this gear is now being replaced by other gear of improved design.

Since the taking over of the maintenance of overhead equipment, 4,640 ft. of contact wire, badly worn in places, were replaced.

As a result of certain breakdowns of the overhead equipment due to breaking of suspension insulators, better designs of insulators and bird guards were evolved and the question of their adoption is being considered.

As a result of several failures of the sub-station equipment the following improvements were considered necessary and some of these were made during the year:—

1. To have separate pilot wires for each sub-station and track sectioning cabin instead of having a common return. This work has been completed.
2. To have separate batteries in each sub-station for the operation of the supervisory gear. The proposal is still under consideration.

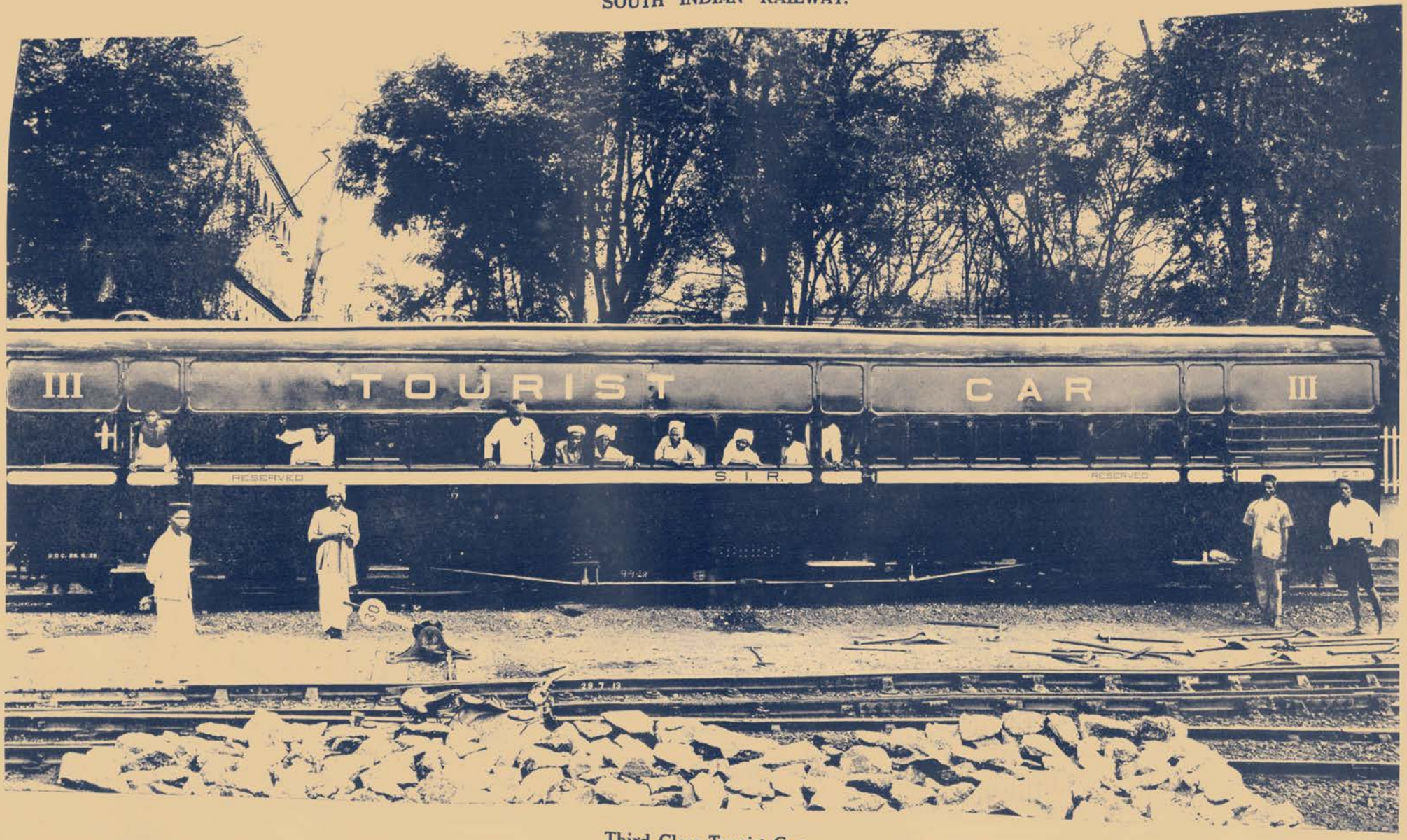
Supervisory control equipment.—The equipment having been found defective in operation during the early part of the year was handed over to Messrs. Metropolitan Vickers Electrical Company, who carried out certain improvements, after which the equipment was taken over again. Failures of rolling stock were centred mainly round the exhausters, line breakers and pinion-end bearings and their cause is still under discussion. Meanwhile certain alterations which have been carried out have produced improvement and every endeavour will be made to trace the actual cause of the trouble experienced and to eradicate it.

60. Road motor competition.—Road motor competition continues to be a problem engaging the close attention of all railways whose interests are being prejudicially affected by the intensification of this competition on the old established routes and its extension into newer areas. Where a road short-circuits the railway route, it is recognised that railways can do little, if anything, to meet this competition. The position, however, is different where the road runs parallel to the railway line, as in most cases, and it is here that railways have to consider organising counter-measures to regain and retain their traffic.

On many of these sections, where the road lies parallel to the railway line, the traffic to be catered for is so small and the effect on earnings so inappreciable as to make the cost of adopting any special measures to meet the competition incommensurate with the potential results. There are, however, other sections where competition continues to be a really serious matter, and this has forced on railways the adoption of various measures to bring back to them some at least of the traffic diverted. Reference was made in previous annual reports to the position in regard to competition on most of the principal railways, and in the following paragraphs brief particulars of a similar nature are given for the year under report.

Assam Bengal Railway.—On the Shaistaganj Habiganj Branch there has been a certain amount of competition. The position is being watched and such alterations in the time tables as are considered advisable will be made.

SOUTH INDIAN RAILWAY.



Third Class Tourist Car.

Bengal Nagpur Railway.—To meet motor-bus competition the train services were improved and two-day return tickets introduced between certain stations. Sentinel Cammell coaches were put on the Chanda Fort-Rajoli and the Pindrai-Mandla Fort sections.

Bombay, Baroda and Central India Railway.—On the Nadiad-Kapadvanj section, where the fares by rail and motor are practically the same, a large volume of traffic was diverted to the road, but a fast steam shuttle service which was introduced succeeded in regaining some of the traffic. On the other broad gauge sections where motor competition has been severely felt such action as is possible has been taken by running a more frequent and quicker service, introducing more frequent halts and by opening up flag stations.

The metre gauge section was specially affected by the development of motor competition round about Ajmer, on the Fatehgarh district and in the Hansi-Bhiwani-Hissar area. A local service was started in October 1928 between Ajmer and Beawar to meet this competition, but on the Fatehgarh district it has been found difficult to take similar action owing to the main roads running alongside the railway for practically the whole length of the district. What was possible was done by a service of local trains timed to arrive at and leave from market centres at convenient hours.

Two Sentinel rail coaches for the broad gauge and three for the metre gauge were on order. When received, these will operate on the sections mostly affected by road motor competition.

Eastern Bengal Railway.—To counter the effect of motor-bus competition, additional trains have been running for the last two years on the following sections:—

	Each direction.
Calcutta-Budge Budge	2 trains.
Phultala-Khulna	1 train.
Daulatpur-Khulna	4 trains.
Narayanganj-Dacca	3 trains.
Kishanganj-Katihar	1 train.
Calcutta-Barrackpore	2 trains.

Two Sentinel trains (one on the broad and the other on the metre gauge section), consisting of one Sentinel tractor and three third class 4-wheeled carriages were started in 1927-28 as an experimental measure, but have not proved suitable as the tractor was not powerful enough to take any additional coaches.

East Indian Railway.—An officer was placed on special duty to investigate the extent to which road motor competition was affecting this railway and to submit recommendations for meeting this competition. His report is under examination by the administration.

Great Indian Peninsula Railway.—Three Sentinel steam coaches were introduced to meet competition, on the following sections:—

Poona-Lonavla.
Badnera-Amraoti.
Nagpur-Katol.

The coaches have proved a convenience to the public and have been well patronised. They have had a depressing effect on the road motor services now running in these areas and the results of their running are being carefully watched.

Between Sholapur and Pandharpur (82 miles) the 3rd class return fare was tentatively reduced to compete with bus services. The effect was so satisfactory that, with effect from the 15th July 1928, this fare was made permanent.

Jodhpur Railway.—The sections affected were Jodhpur-Marwar Pali and Marwar Pali-Sojat Road. To meet the competition between Jodhpur

and Marwar Pali, return tickets at reduced fares were introduced, but this has had no effect on the position, as the motor-bus offers a quicker and more frequent service than can be given by rail.

Madras and Southern Mahratta Railway.—The effect of road motor competition continues to be felt, as in previous years, in the neighbourhood of Madras, on the Bezwada-Masulipatam Branch, on the length between Belgaum and Poona, and also between towns the railway route for which is longer than the motor-bus road, such as Gooty and Anantapur, Kurnool and Nandyal, and Adoni and Bellary.

North Western Railway.—Special attention has been given to the question of increasing the short distance passenger services, and accelerating the speed of trains generally.

Since the close of the year (1927-28) week-end tickets have been introduced for all classes at a fare and a half for distances up to 30 miles, a fare and one-third for distances 31 to 45 miles and a fare and a quater for distances over 45 miles. The introduction of these week-end tickets has failed to arrest the fall in earnings, particularly on sections affected by intensive road competition, and the experiment cannot therefore be considered to have been a success. The small increase in the number of passengers carried over the whole system consequent on week-end tickets being issued was not sufficient to cover the decrease in earnings.

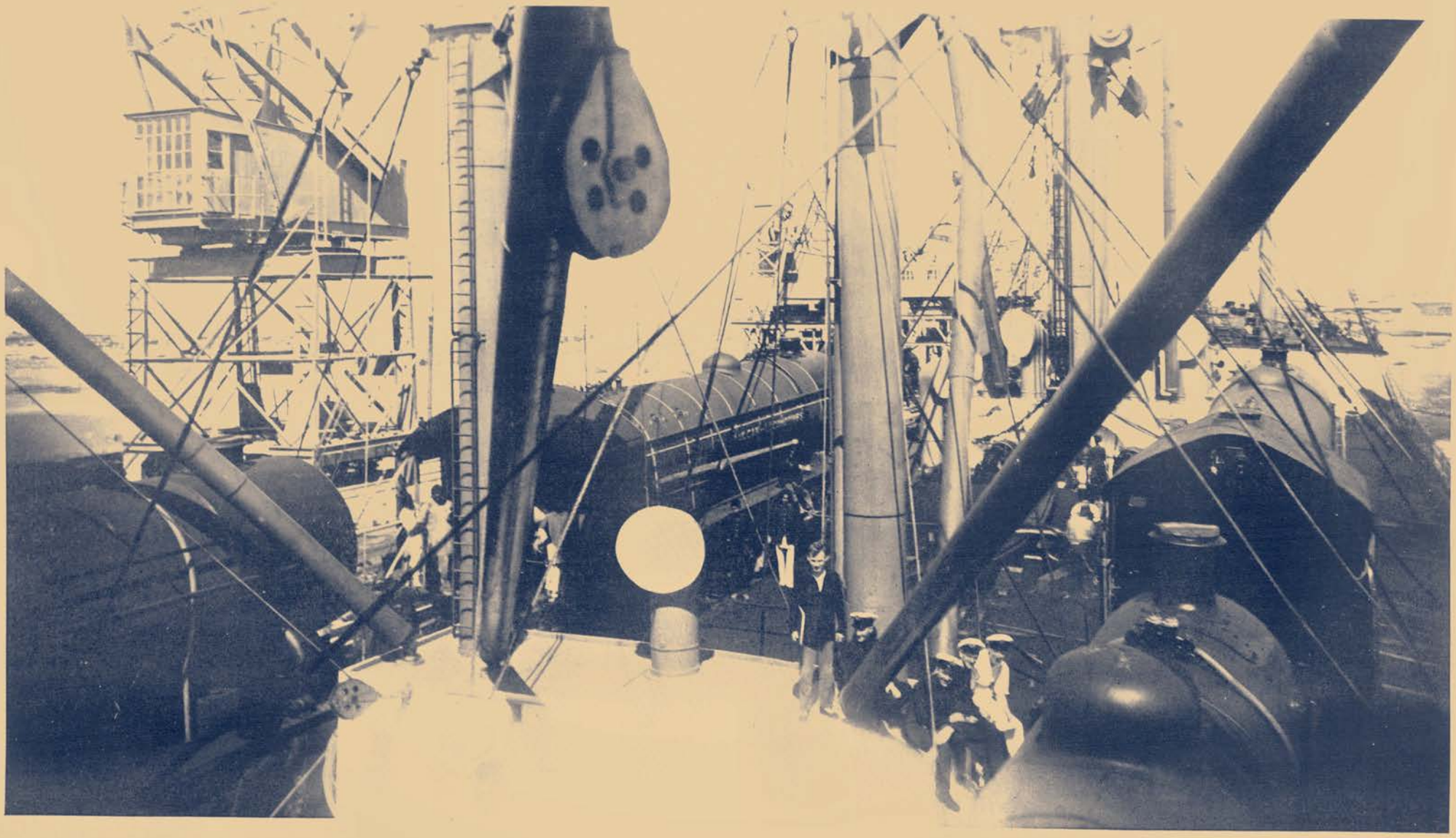
Rohilkund and Kumaon Railway.—To meet the competition on the Bareilly-Kathgodam section, two fast up and down shuttle trains were introduced, and the timings of practically all other trains accelerated.

61. Trains de Luxe.—The popularity of the Imperial Indian Mail which has been running since November 1926 as a weekly service (except for about three months each year) between Bombay and Calcutta, in connection with the English mail steamers continues to grow. The demand for accommodation by this service necessitated the attachment to the train, from 18th October 1928, of an additional corridor coach containing 13 lower berths arranged in 1 single and 6 two-berth compartments thereby providing accommodation for a total of 45 passengers.

With the present composition, there are now :—

(*a*) two-berth compartments	13	compartments with 2 lower berths in each, 7 compartments with one upper and one lower berth in each;
(*b*) single berth compartments	5.	

In previous years, it was the practice when bookings were very heavy to run a duplicate weekly service between Bombay and Calcutta, the composition being ordinary first class bogies of the non-vestibuled type. From February 1929, however, vestibuled coaches of the type provided on the Imperial Indian Mail and with the same conveniences have been running on the duplicate service. The Imperial Indian Mail Train throughout maintained uniformly good time, leaving Ballard Pier 7 hours after the mail steamer has been signalled at Bombay. On the journey from Calcutta to Bombay the train arrives at Ballard Pier station at 12 noon on Saturdays; about one hour before the time fixed for the departure of the mail steamer. As is usual in other countries, when a special train is run with amenities not usually provided in the ordinary train services, a surcharge (in this case of Rs. 25) is levied over and above the ordinary first class fare from passengers travelling by the Imperial Indian Mail. The Peninsula and Oriental weekly Express, which was being run every week by the Bombay, Baroda and Central India Railway in connection with the incoming mail steamers, has also proved very successful. From the 1st September 1928, this Express was run in conjunction with the North Western Railway between Bombay and Peshawar as a daily train. This train, which is now called the



XC Type Engines on Board prior to Unloading at Karachi.

Frontier Mail, takes 23½ hours to reach Delhi (865 miles), 32½ hours to reach Lahore (1,162 miles) and 43½ hours to reach Peshawar (1,450 miles). As the train runs all the year round and as carriages are cut off at some of the more important stations *en route* at which the train arrives at an inconvenient hour at night, to enable passengers to sleep in the carriages undisturbed till the morning, non-corridor carriages have been considered preferable to vestibuled stock, as they give the maximum amount of space. For the convenience of passengers proceeding to and arriving from Europe by the mail steamers, portions of the Frontier Mail arrive at and depart from the Ballard Pier Station alongside the mail boat. During the busy season, whenever traffic warrants it, the trains are duplicated to and from Delhi. Among the amenities provided on the Frontier Mail may be mentioned the supply of daily newspapers free of charge, a daily news bulletin telegraphed from Bombay by arrangement with Reuters Limited, and the sale of books, magazines and playing cards on the train. The arrival of the train at Delhi is announced to the Bombay public by the flood lighting of the Railway Administrative offices at Church Gate.

62. Lower class Tourist Cars.—A bogie third class tourist carriage on a 50-foot frame was constructed by the South Indian Railway and brought into use in May 1928. The carriage was specially designed to provide up to date conveniences and has accommodation for 56 passengers by day and 28 by night. It is electrically equipped and has a kitchen, dining room, and lavatories provided with baths.

A similar third class carriage on a 68-foot under-frame was constructed on the North Western railway with accommodation for 42 passengers. This carriage, like that on the South Indian railway, is electrically equipped and is provided with a kitchen, lavatories, five latrines and two washing places.

63. Through passenger services.—Steps were taken during the year for the introduction over the South Indian, Madras and Southern Mahratta, His Exalted Highness the Nizam's Guaranteed State, Great Indian Peninsula and North Western railways of through service carriages (two bogies, *viz.*, one composite first and second and one inter and third class) to run by different connecting trains between Mangalore on the South Indian railway and Peshawar on the North Western railway, and this service was introduced from the 1st of April 1929. It is believed that this is one of the longest runs in the world for a service of this kind: a journey of 2,495 miles, which is covered in about 96 hours.

64. Running of through goods trains for long distances.—The expeditious transit of goods traffic, particularly for long distances, is a matter that is constantly under examination and it may be of interest to give here a brief résumé of what was done on some railways during the year under report to run complete train loads for as long distances as possible.

Bengal Nagpur Railway.—As the bulk of the goods traffic carried consists of minerals, not much difficulty is experienced in making up long distance through goods trains. A regular daily service of through trains carrying coal is run between the coalfields and Nagpur, Katni-Marwara, Kidderpore Docks, Shalimar and Tatanagar. One or two through manganese ore trains are also made up at Bilaspur daily and run through to Shalimar.

Madras and Southern Mahratta Railway.—One through goods train is booked to run each way between Madras and Waltair (485 miles) between Rayapuram and Jalarpet (133 miles) and Rayapuram and Gooty (258 miles). On the north-east line, through trains of 100 vehicles are being run up to Bezwada about once a week, a portion being ready marshalled to proceed onwards to Waltair.

One through goods train runs daily from Hospet to Hubli (89 miles) with manganese ore traffic for Mormugao Harbour, and another between Hubli and Poona (334 miles) with loads for the furthest distance possible.

The extension of engine pooling has facilitated the running of through goods trains, but beyond Arkonam this is restricted by the fact that loads in the down direction are reduced. This difficulty has been overcome to a certain extent on the south-west line by providing selected trains to carry through loads for Jalarpet up to the tonnage permitted from Arkonam, with an addition to be detached at Arkonam in one block. The situation with regard to loads for the north-west line from Madras is handicapped by the fact that the load changes no less than six times between Arkonam and Gooty. This difficulty is overcome to a certain extent by adjusting the speed to the load permissible over the different sections. The position on the north-west line will be considerably improved as soon as heavier engines are able to run through to Gooty.

His Exalted Highness the Nizam's Guaranteed State Railways.—Through goods trains were run between Secunderabad and Dornakal (a distance of 140 miles) to avoid shunting at Kazipet, where the yard accommodation is somewhat restricted. A system of extended engine runs of goods trains between Secunderabad, Nizamabad and Purna and Manmad was introduced on the Hyderabad-Godavari Valley line for the busy season, eliminating the detentions usually caused to wagons at engine changing stations. This has resulted in a considerable saving in the use of wagons.

North Western Railway.—Through long distance goods trains were introduced in both directions between :—

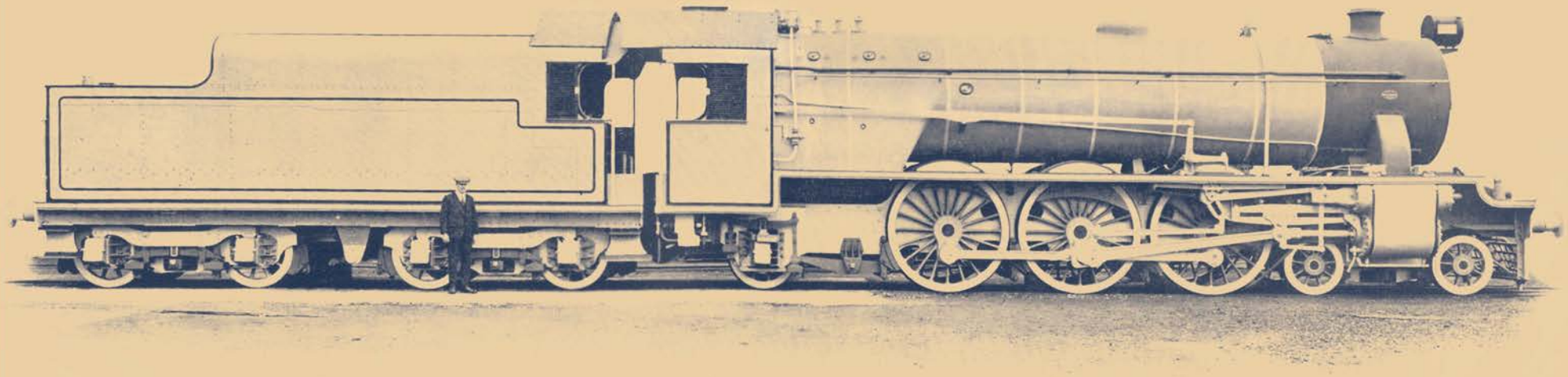
Shakurbasti and Lahore (290 miles),
Shakurbasti and Samasata (396 miles),
Samasata and Rohri (209 miles),
Khanalampura-Lalamusa (322 miles),
Karachi-Lahore (755 miles),
Karachi-Samasata (504 miles),
Lahore-Rawalpindi (180 miles).

65. Congestion of traffic on the East Indian and Bengal Nagpur Railways.—A situation giving rise to serious difficulties in the supply of wagons, for the coalfields in particular, arose on the East Indian Railway during the months of February and March 1929. The partial failure of the wheat crop in the United Provinces, resulting from a poor monsoon rainfall, necessitated the importation into the United Provinces *viâ* Calcutta of large quantities of wheat and rice. The position was aggravated by a simultaneous importation into the port of Calcutta of large sugar cargoes for despatch to upcountry.

In a normal season the traffic in agricultural produce, and a considerable proportion of the output from the coalfields, move downwards towards Calcutta and the empty wagons, when released, return up-country loaded with imported manufactured goods, or empty to the coalfields to be loaded with coal for up-country stations. The downwards traffic predominates, a large number of empties having in consequence to be worked upwards as far as the coalfields. During the period under reference, the downwards loaded traffic was comparatively light, while, at the same time, large quantities of grain had to be moved upwards from Calcutta. Coincident with this situation large quantities of fodder and grain had to be moved into the United Provinces from the South-West of India and from the eastern districts of the Central Provinces. This unusual flow of the traffic, and the enhanced diversity of destinations for upwards traffic, involved increased shunting at way-side stations and intensified difficulties in marshalling yards.

Owing to delays and congestion thus caused and to the increase in the number of wagons which had to be moved to the docks in Calcutta, it took considerably longer than usual for wagons to circulate and return to the

NORTH WESTERN RAILWAY.



Indian Railway Standard XC Type Locomotive—Broad-gauge.

coalfields for reloading. Soon after the difficult period began, the following action was taken:—

(*a*) State managed Railways, with the exception of those portions serving the coalfields and the Port of Calcutta were instructed to reduce their loading by 20 per cent.;

(*b*) the Chief Mining Engineer with the Railway Board reduced his indents for wagons for loco. coal, loading of loco. coal being stopped on two days a week;

(*c*) the Director of Wagon Interchange was given complete authority as regards the interchange of wagons for a limited period;

(*d*) arrangements were made to divert daily at points in the coalfields two train loads of coal intended for destinations in the direction of Bombay from the East Indian Railway to the Bengal Nagpur Railway and also to divert two trains moving upwards from Calcutta to the loop line;

(*e*) the East Indian Railway discontinued working empties to the docks. The Eastern Bengal Railway and Bengal Nagpur Railway supplied daily 200 and 100 wagons respectively to the Port Trust to meet their requirements;

(*f*) the Bengal Nagpur Railway hauled daily 100 wagons loaded at the docks with traffic for Moghal Sarai or beyond and handed them over to the East Indian Railway at Gomoh. In return, the East Indian Railway handed over 100 empties to the Bengal Nagpur Railway in the coalfields daily;

(*g*) special Officers were posted to control traffic at vital points on the East Indian and Eastern Bengal Railways.

As a result of the arrangements made, a substantial improvement was effected and the situation had eased down by the beginning of April 1929.

The resultant shortage of wagons on the coalfields was mainly due to the fact that the abnormal upwards traffic offering at that time severely tried the capacity of the lines on the East Indian and Bengal Nagpur Railways.

66. Working of the wagon pool.—The usefulness of the broad gauge wagon pool, to which reference was made in paragraph 58 of last year's Report, was particularly manifested during the year under review, when the seasonal demand for stock reached a record point and taxed the wagon supply capacity of broad gauge railways. As usual, the demands by railways for wagons from the pool commenced about the middle of December 1928, and within a few days there were very few wagons spare on railways. All requests from railways for wagons were met until the last week of January 1929, when the import by sea of food-grains into Calcutta and heavy movements up-country caused congestion resulting in a shortage of wagons in the Bengal coalfields. The pool enabled the East Indian, Bengal Nagpur and Eastern Bengal Railways to be provided with a total of about 8,000 wagons over and above the number of wagons owned by them, out of which some 3,000 wagons were worked to these railways in 10 days at the critical period. Thereafter, the problem became one of wagon movements rather than that of the supply of additional wagons and the situation rapidly improved and became more or less normal early in April 1929.

There has been no change in the rules for allocating hire charges on goods stock which were introduced from the 1st January 1928, and were considered to be tentative till such time as a more equitable method of dividing these charges could be formulated. Under the present method:—

(*a*) a railway is called upon to pay hire on the debit balance which it had incurred to meet the needs of its traffic, and in no cir-

cumstances is it called upon to pay hire on the debit balance for stock which it did not require;

(*b*) the hire due from each debtor railway which has incurred debits for the needs of its traffic is divided among creditor railways in proportion to their credits.

The system of neutral control of wagon examination at junctions of interchange was in operation at six stations, and arrangements were in progress during the year under review for bringing three more stations under this control. The amount of debits for damages and deficiencies raised at junctions under neutral control has been further reduced as will be seen from the following figures:—

	1927-28.	**1928-29.**
	Rs.	Rs.
(*a*) Number of wagons dealt with . .	7,98,719	**7,89,182**
(*b*) Total debit for deficiencies, damages and loose fittings.	20,37,297	**15,93,314**
(*c*) Debit per wagon dealt with . .	2/8/10	**2/0/4**

These figures compare favourably with the results at junctions not under neutral control, the average debit per wagon for 11 such junctions working out to Rs. 4-15-10 per wagon.

67. Coal.—In 1928 the coal mined in the various provinces of British India amounted to 21,515,796 tons as against 21,108,976 tons in 1927—an increase of 406,820 tons.

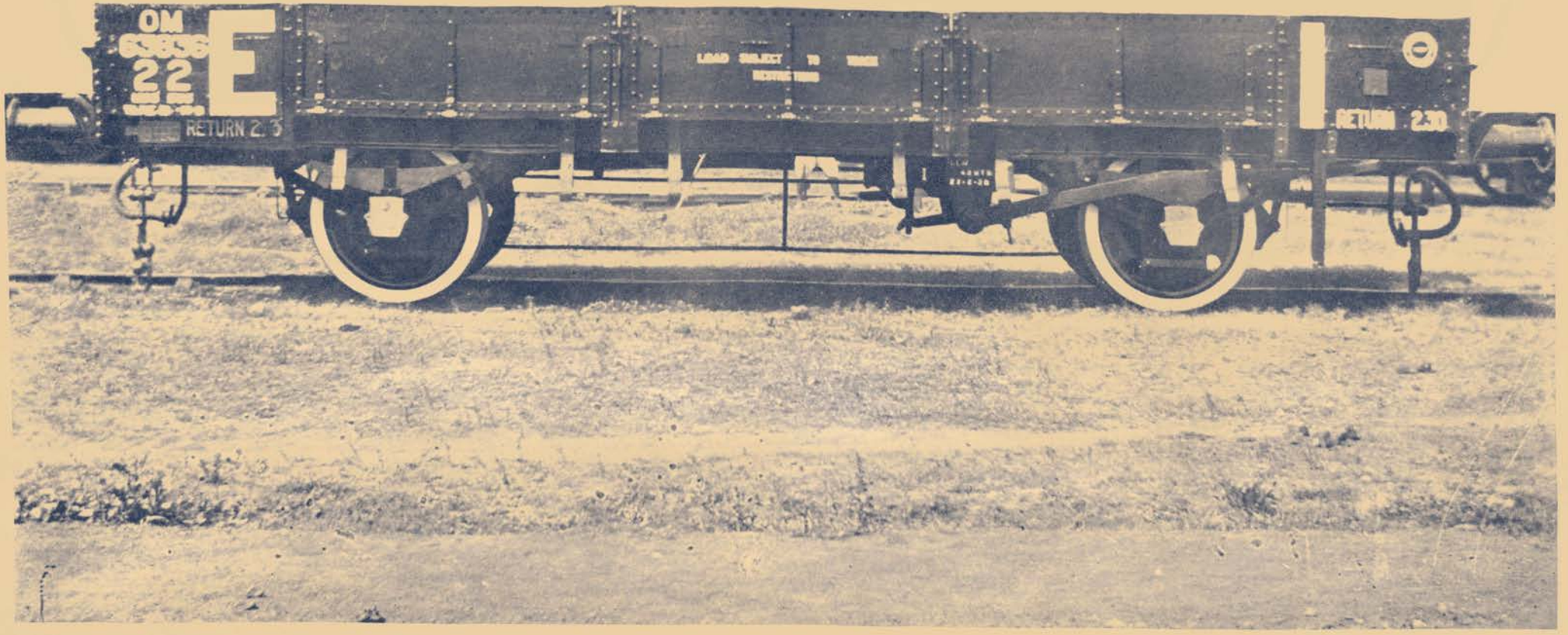
The output from the principal railway-owned collieries during 1928-29 compared with the previous year's output was as follows:—

Colliery.	Owned by	Output (tons).		Distribution in 1928-29.					Sales and consumption at Colliery.
		1927-28.	**1928-29.**	E. I. R.	B. N. R.	E. B. R.	G. I. P. R.	N. W. R.	
Bokharo Ramgarh.	E. I. & B. N.	989,727	**922,174**	486,430	412,337	...	...	...	23,407
Sawang . .	E. I. & B. N.	112,900	**121,024**	63,588	43,616	...	...	...	14,270
Kurhurbaree and Serampore.	E. I. . .	777,250	**746,286**	502,100	...	...	...	...	229,310
Bhurkunda .	State . .	39,543	**74,041**	...	...	2,292	...	71,749	...
Kargali . .	State . .	885,686	**762,451**	62,117	...	115,867	580,958	...	3,500
Argada . .	B. N. . .	257,301	**303,439**	...	...	...	...	...	...
Jarangdih .	B., B. & C. I. & M. & S. M. Rys.	99,198	**114,792**	...	...	...	...	...	...
	Total .	3,161,545	**3,044,207**	1,114,235	455,953	118,159	580,958	71,749	270,487

The principal despatches of coal were from the East Indian and Bengal Nagpur Railways, *viz.*:—

	Tons.
From East Indian Railway	14,188,451
From Bengal Nagpur Railway	7,175,378
TOTAL .	21,363,829

Shipments from Calcutta.—Including bunker coal, shipments from the port of Calcutta to Indian and foreign ports during 1928-29 amounted to 3,691,173 tons of which 615,460 tons was on account of Indian Railways and 159,018 tons for the Ceylon Government Railways making a total of 774,478 tons as compared with 792,933 tons in 1927-28.



Indian Railway Standard open Military Type Truck, 5'-6" gauge.

Inspection of coal.—The State Railways Coal Department inspected 5,648,121 tons of coal during the year under review as compared with 5,498,439 tons in 1927-28, and also continued its work on behalf of the Coal Grading Board. The amount of cargo coal shipped to various ports during 1928 was 2,306,818 tons.

Kargali Colliery.—The Central Power station was taken over from the contractors from 1st February 1929 and current is being supplied to the Joint Bokaro and Joint Jarangdih collieries.

Bhurkunda Colliery.—The development work underground is progressing satisfactorily. The Power House is supplying current for the haulage, pumps, etc.

CHAPTER V.

ROLLING STOCK AND MATERIALS.

68. Additions to equipment.—The equipment and the net additions to equipment of Indian Railways during 1928-29, are tabulated in summaries Nos. VIII and IX in Volume II of this Report. The details for individual lines will be found in statements Nos. 10, 11, 34 and 35.

During the year the following rolling stock, including arrears brought forward from previous years, was on order for broad and metre gauge railways respectively:—

	Broad gauge.	Metre gauge.
Locomotives	203	230
Coaching stock	2,969	1,238
Goods stock	1,698	4,263

Against these the number actually placed on the line by the end of the year was as follows:—

	Broad gauge.	Metre gauge.
Locomotives	77	93
Coaching stock	1,342	692
Goods stock	971	1,990

The numbers of coaching and goods stock are stated in terms of four-wheelers; a bogie being reckoned as two four-wheelers. These figures do not, however, represent the actual net additions to rolling stock as they include also stock built in replacement of existing engines and vehicles which had reached the end of their useful life.

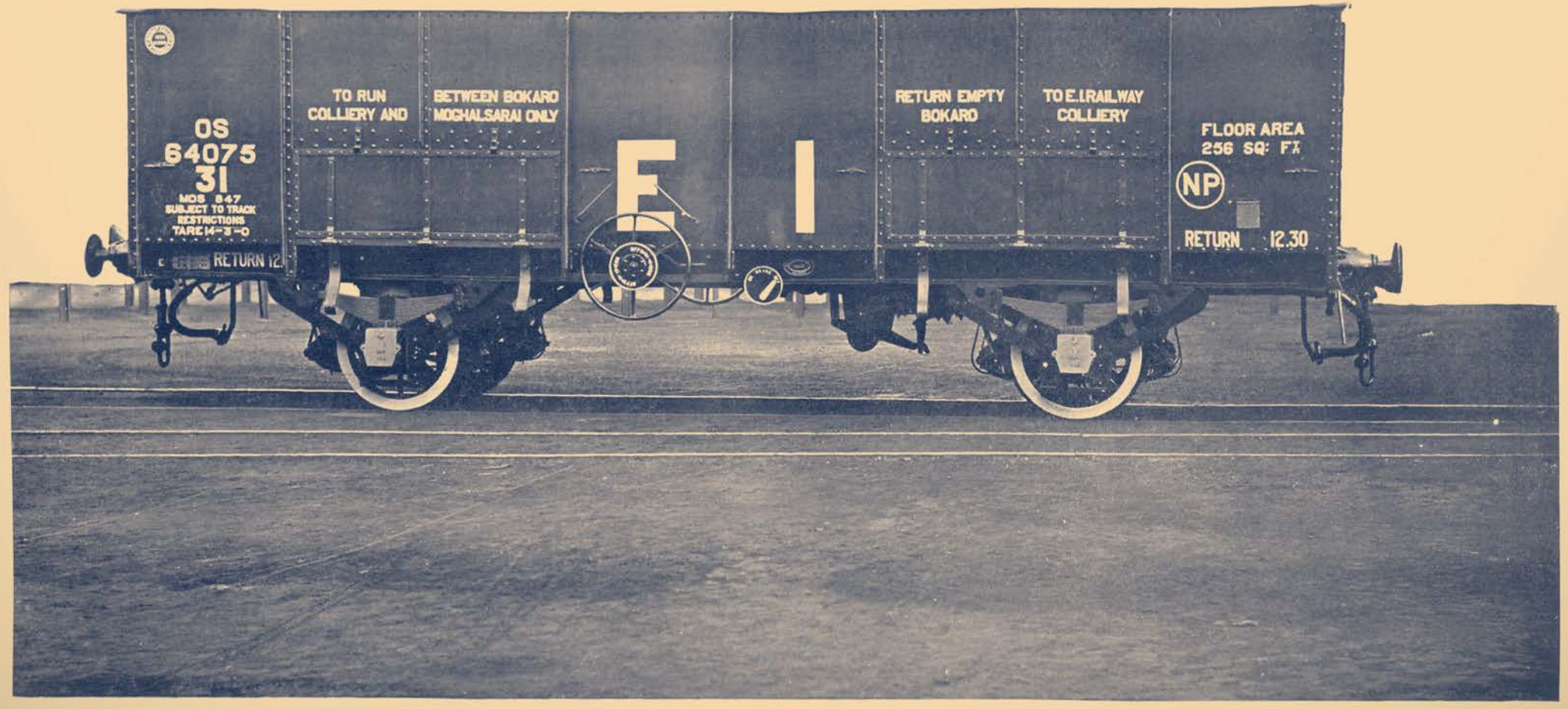
For instance, no broad gauge locomotives were obtained as additions and the number of broad gauge locomotives at the end of the year was 105 less than at the beginning, so that 182 were scrapped during the year, 77 of them being replaced with new ones. On the metre gauge, 9 out of the 93 new locomotives were additions, the rest being replacements. The policy of replacing older engines of low tractive effort by modern engines of higher tractive effort was continued and the average tractive effort per engine rose in the course of the year from 22,442 lbs. to 22,832 lbs. on the broad gauge and from 12,912 lbs. to 13,479 lbs. on the metre gauge.

Coaching vehicles.—1,398 units of old type broad gauge carriages were replaced during the year by modern vehicles of higher capacity, with the result that 504 first class, 2,851 intermediate class and 2,725 third class seats were added to the broad gauge seating accommodation during the year. On the metre gauge there was an increase of 578 seats in the 1st and 2nd class, 1,026 in the Inter class and 11,210 in the 3rd class.

Wagons.—4,725 wagons were scrapped during 1928-29, 971 of them only being replaced. There was thus a net reduction of 3,754 in the number and 90,126 tons in tonnage capacity of broad gauge wagons during the year.

On the metre gauge 507 wagons were added during the year representing an increase in capacity of 12,852 tons.

69. Standardization of Locomotives.—At the close of the year about 150 of the new Indian Railway Standard Locomotives were in service on Class I broad and metre gauge Railways. Reports received on the working of these engines are very satisfactory and the anticipated reduction as compared with the original British Engineering Standards Association standard engines in maintenance costs and fuel consumption is becoming apparent. Several minor defects inseparable from entirely new designs have been



Indian Railway Standard High Capacity Coal Wagon, O.S. Type, 5′-6″ gauge.

brought to light as the result of further experience with the trial locomotives. The modifications found to be necessary will be incorporated on the standard designs together with numerous detailed improvements which have been suggested by the mechanical and operating Departments.

The Locomotive Standards Committee met twice during the year and, in addition to dealing with the various modifications referred to above, examined the preliminary designs for additional types put forward by them during the previous year. The British Engineering Standards Association Unilateral Gauging system was adopted as the standard practice for locomotive work and all future locomotives will be built to the tolerances stipulated under the provisions of this system. A large number of standard fittings have been incorporated in the current superheater conversion and reboilering programmes which are proceeding satisfactorily.

At the close of the year 146 broad gauge and 111 metre gauge standard types of locomotives representing about 85 per cent. of the total requirements for 1929-30 were on order.

70. Standardization of Rolling Stock.—Considerable progress has been made during the year in the preparation of standard designs for broad and metre gauge types of coaching underframes and wagons, thereby enabling the Class I Railways to participate in the Railway Board's combined call for tenders for the bulk of the total 1929-30 requirements. Orders were placed for the equivalent of 4,315 four-wheeled units.

Contracts for the whole of the standard wagon requirements were placed with Indian wagon-building firms.

Standard working drawings and specifications for the following types of broad and metre gauge underframes and wagons became available for tendering purposes during the year:—

Underframes coaching bogie.
Underframes coaching 4-wheeled.*
Wagons, open.
,, coal.
,, Military.
,, covered general.
,, jute.
,, explosive.
,, cattle.
,, bogie, coal.†
,, rail.†
,, covered.†

The High Commissioner for India was requested to place orders for certain additional types of sample broad and metre gauge underframes and wagons proposed by the Carriage and Wagon Committee including—

Underframes coaching bogie (short).
Wagons, covered (high capacity).*
,, Coal, 4-wheeled (high capacity).†
,, well.
,, petrol.
,, oil.
Vans, goods brake.
,, motor (Steel).†

* Broad gauge only.
† Metre gauge only.

The following Narrow Gauge types of sample vehicles were ordered :—

Underframes coaching bogie.
Wagons, open.
,, covered.
,, petrol.
,, rail.
Vans, goods brake.

The Committee also completed standard designs for the following broad gauge vehicle bodies :—

Horse box.
Motor van.
Medical van.

Samples of each type of body were constructed.

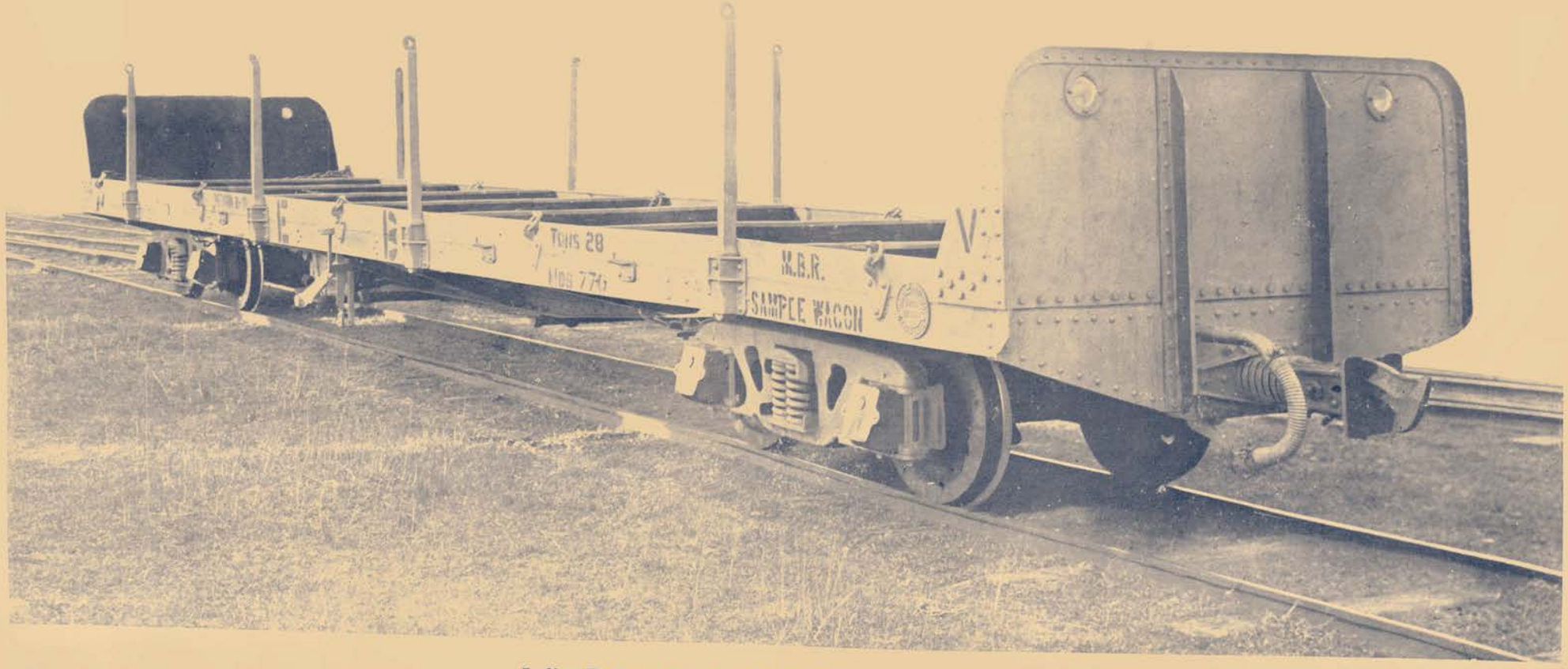
71. Stores Standardization Committee.—In Chapter I of last year's Report, reference was made to the formation of a Stores Standardization Committee in connection with the reorganization of State Railway Stores Department. Since its inception, the Committee has held three meetings and 132 specifications covering a large proportion of the items in common use by railways have been drafted and approved by the Railway Board. These specifications, which will be known as Indian Railway Standard specifications, will be issued in pamphlet, or loose leaf form, indexed and dated, and catalogues will be issued periodically to ensure that Railways retain up-to-date publications only. The Committee's recommendations have been incorporated in the Railway Board's specifications for Rolling Stock.

The lack of standard designs and specifications for automatic vacuum brake fittings has caused considerable inconvenience. The subject is under investigation at present and it is hoped that the necessary drawings and specifications will be completed during 1929-30.

72. Electric Headlights for Locomotives.—In May 1928, the Railway Board issued orders to State-managed railways that indents for new locomotives for passenger, mixed and goods train services should provide for electric headlights; the principal Company-managed railways were at the same time requested to make similar arrangements. The intention is that electric headlights should be fitted to all-train engines on main lines and important branches from 1st April 1932, and arrangements have been made accordingly.

73. Supply of rails and fishplates from indigenous sources.—Under the Railway Board's 7-year contract with Messrs. The Tata Iron & Steel Company for supply of rails and fishplates to the State and Company-managed railways, orders amounting to approximately 130,200 tons of rails and 4,100 tons of fishplates were placed with the Steel Company against demands for 1928-29. The Company had supplied only 10,600 tons of rails, together with corresponding fishplates, when their works were closed on the 1st of June 1928, due to a strike. This strike lasted for about 4 months, and resulted in some dislocation of arrangements made by railway administrations for rail renewals. It was found necessary to place orders abroad for approximately 10,000 tons of rails against demands of exceptional urgency from the Burma and Bengal Nagpur Railways. By the time the strike was over Government had decided on a considerble reduction of its programme of works and the demands for rails and fishplates had to be reduced. The Steel Company supplied 59,546 tons of rails during the year against 1928-29 demands.

An agreement has been arrived at by which second class rails will be authorised for use in sidings for light traffic lines. These second class rails comply with the technical provisions of the Railway Board's specification for first class rails but are degraded on account of visual defects.



Indian Railway Standard Bogie Rail Wagon, Metre-gauge.

74. Development of the use of Indigenous Timbers for Sleepers and Carriage Building.—As was explained in last year's report some time must elapse before definite conclusions can be obtained as to the suitability of all the timber species now being tried out, but investigations continue, with the collaboration of the staff of the Forest Research Institute, Dehra Dun, into the increased use of various indigenous timbers for sleepers and coach building.

Extended use was made of the North Western Railway sleeper treating plant at Dhilwan in the Punjab. During the year seven lakhs of sleepers were treated in this plant of which 312,000 were chir (Pinus Longifolia) and the rest fir and blue pine. The average cost of treatment was about Rs. 1-13-0 per broad gauge sleeper. There are still large numbers of chir sleepers, treated by the open tank method by the United Provinces Forest Department, on the North Western and East Indian Railways that are still in good condition after fourteen years' service. The treated chir sleeper is at present the most economic wooden sleeper on the market. An incising machine was obtained for use with fir sleepers, to obtain better penetration of the preservative fluid, but considerable difficulty was experienced with the frequent breakages of the knives.

A sleeper treating plant was erected during the year to treat Assam hard woods at Naharkatiya on the Assam Bengal Railway. This plant began to operate at the close of the year. The capacity of the plant is about two and a half lakhs of metre gauge sleepers annually. Plans and estimates are being prepared for the proposed plant at Jharsaguda on the Bengal Nagpur Railway. This plant will deal chiefly with sal sapwood and asna (Terminalia tomentosa) sleepers, both of which from experiments made by the Forest Research Institute show every promise of providing excellent sleepers. The project of erecting a plant in South India was abandoned as the railways concerned could not guarantee a demand for a sufficient number of sleepers annually to make the scheme an economic proposition. The Mysore Government plant at Bhadravati began to operate during the year but, from reports received, some difficulty has been experienced in seasoning the sleepers.

The erection of a kiln-seasoning plant of the Sturtevant type with an annual capacity of 3,000 tons of converted timber, for carriage building, referred to in last year's report, was begun during the year by the East Indian Railway at Lillooah. The results of the trials of small lots of some of the more common indigenous timbers made by various railways are being carefully watched. About half of the timber consumed in the carriage shops of the Class I Railways is used for repair and other miscellaneous purposes, whereas, at present, only about 28 per cent. of this timber is of miscellaneous species other than Burma teak. It is clear, therefore, that when the value of the miscellaneous timbers is more fully known and the seasoning plant now under erection begins to operate much more use can be made of these timbers. Much more attention is also being paid to the proper seasoning of timber.

Another trial is being made in the construction of four coaches of kiln seasoned timber. One of these, of Central Provinces teak, was finished during the year. Timber for the other three has been collected at Lillooah, East Indian Railway.

The total amount spent on timber other than sleepers by Class I Railways (excluding His Exalted Highness the Nizam's Guaranteed State Railway and Jodhpur Railway) during the year was Rs. 88·45 lakhs.

75. Sleeper Pool Committee.—The third annual meeting of the Sleeper Pool Committee, with the Director, Civil Engineering, Railway Board, as Chairman and the Timber Advisory Officer with the Railway Board, as Secretary, was held at Simla in July 1928.

The toal numbers of sleepers purchased during the year and distributed among the railways comprising the Pool were 2,198,213 broad gauge and 1,420,026 metre gauge. There was a decrease of 658,310 broad gauge as com-

pared with 1927-28. This is chiefly due to the fact that no sleepers were received from Nepal during the working season of 1927-28 and also partly by the decision of the Railway Board to take less wooden sleepers in view of their uneconomic value when compared with metal sleepers. No foreign wooden sleepers were imported by any railways in the Pool: The prices of coniferous sleepers in the Northern Group were somewhat easier. In the Eastern Group prices were maintained at the same level as last year; efforts are now being made to arrange 3-year contracts at reduced prices in this Group. All the wooden sleepers required were available.

The total amount spent on wooden sleepers on Class I Railways (excluding His Exalted Highness the Nizam's Guaranteed State Railways and Jodhpur Railway) was Rs. 2·64 crores.

76. Value of Railway Materials purchased.—The reduction in total purchases in 1928-29, as compared with 1927-28, which is displayed in the tabulated statement below, is accounted for very largely by the reduced programme of capital expenditure in 1928-29. Messrs. Tata's works were out of commission from June to October, 1928, and this, in turn, resulted in late deliveries of rolled sections to the Indian wagon building firms and in late deliveries of rails to Indian railways. The decrease in purchases was still further accentuated by the disastrous strikes which occurred on East Indian, South Indian and His Exalted Highness the Nizam's Guaranteed State Railways. The position is analysed in greater detail below.

The value of stores purchased by Class I Railways (excluding His Exalted Highness the Nizam's Guaranteed State and Jodhpur Railways which are mainly the property of Indian States) shows a large decrease from 35·87 crores in 1927-28 to 29·63 crores in 1928-29. The principal decreases, as indicated by the statement below, were under permanent way (340 lakhs), rolling stock (198 lakhs), tools and stores (138 lakhs), building, station and fencing material (47 lakhs), workshop machinery (12 lakhs), and other materials (39 lakhs). Against this the heads electrical plants and bridge work recorded an increase of 126 and 31 lakhs respectively.

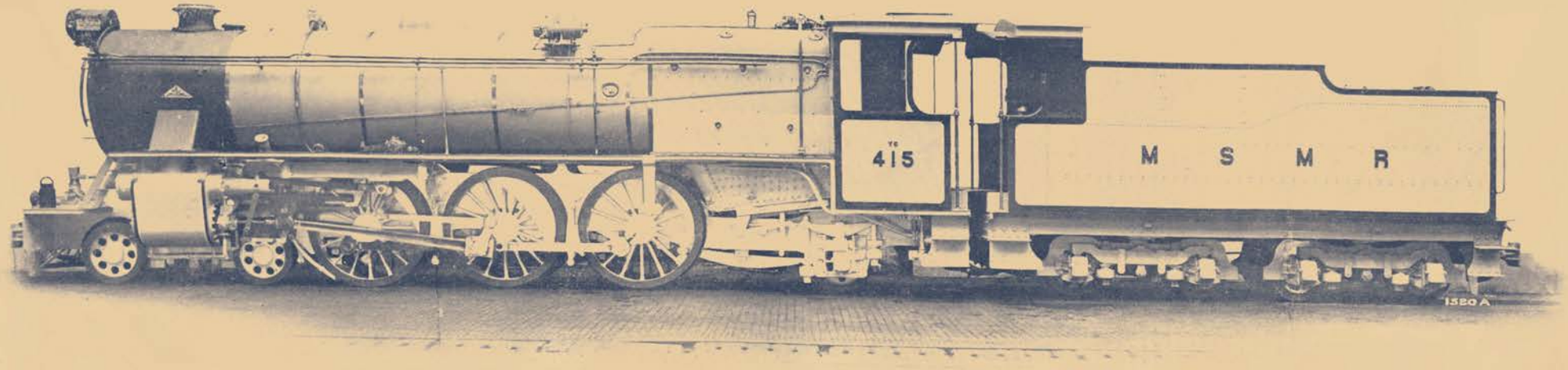
Of the total decrease of 6·24 crores Rs. 3·89 crores were accounted for by " imported materials " and 2·35 crores by " indigenous materials ", the decrease under the latter being mainly under the heads permanent way (114 lakhs), tools and stores (56 lakhs), rolling stock (11 lakhs,), building station and fencing material and bridge work (20 lakhs) and other materials (36 lakhs).

Heading.	Value of imported materials.			Value of indigenous materials.	Total purchases 1928-29.	Total purchases 1927-28.
	Purchased direct.	Purchased through Agents in India.	Total imported materials.			
	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.	Rs. crores.
Rolling-stock	3·75	1·12	4·87	0·38	**5·25**	7·23
Tools and stores	0·59	2·56	3·15	3·38	**6·53**	7·91
Permanent-way	1·45	1·08	2·53	4·47	**7·00**	10·40
Electric plant	2·78	0·81	3·59	0·05	**3·64**	2·38
Building and station materials and fencing	0·10	0·39	0·49	0·23	**0·72**	1·19
Bridge work	0·71	0·19	0·90	0·06	**0·96**	0·65
Workshop machinery	0·42	0·29	0·71	...	**0·71**	0·83
Engineer's plant	0·13	0·21	0·34	0·05	**0.39**	0·46
Other materials*	...	0·24	0·24	4·19	**4·43**	4·82
TOTAL	9·93	6·89	16·82	12·81	**29·63**	35·87

77. Purchases through the Indian Stores Department.—The marked increase in purchases through the Indian Stores Department of lubricants, paints and varnishes was due mainly to a decision (to which effect was given in August 1928), to purchase certain categories of stores included in annual contracts of railways through the Indian Stores Department.

* Other materials consist of coal and coke, stone, bricks, lime and ballast, etc.

MADRAS AND SOUTHERN MAHRATTA RAILWAY.



Indian Railway Standard—YC type Locomotive—Heavy passenger type—Metre-gauge.

The purchases by Class I Railways (excluding His Exalted Highness the Nizam's Guaranteed State and Jodhpur Railways) through the Indian Stores Department for the years 1927-28 and 1928-29, were as follows:—

	(In thousands of rupees) 1927-28.	1928-29.
1. Textiles	28,12	**20,45**
2. Cement	14,48	**5,73**
3. Creosote	12,58	**—25**
4. Lubricating and other oils and greases	4,63	**46,27**
5. Paints and varnishes	4,34	**11,30**
6. Electric fans, lamps and other electrical stores.	4,29	**6,03**
7. Plant and machinery	4,08	**6,18**
8. Water supply materials	88	**2,63**
9. Structural steel work including bridge girders.	17	**96**
10. Soaps	38	**56**
11. Hardware	...	**1,39**
12. Miscellaneous	33	**2,71**
TOTAL	74,28	**1,03,96**

78. Expenditure on the fabrication and manufacture of stores in India.—The statement in paragraph 76, showing the value of stores purchased under principal headings, does not take into account the very large expenditure incurred by the railways on fabrication and manufacure, nor the cost of large engineering works carried out '*in situ*'. The following statement shows the approximate expenditure on the fabrication of purchased stores, separate figures being given in the case of stores imported and stores of Indian manufacture or of indigenous origin. These figures are exclusive of the value of the stores used in the fabrication and manufacture or in the engineering works.

	Cost of fabrication and manufacture of stores imported direct or of imported stores purchased in India.	Cost of fabrication and manufacture of stores of Indian manufacture or of indigenous origin.
	(In thousands of rupees.)	
1. Construction of Locomotives	17,45	6,24
2. Construction of Boilers	1,50	7
3. Construction of coaching stock including underframes.	68,33	16,18
4. Construction of Goods stock including underframes.	42,33	16,87
5. Construction of spare parts of Locomotives.	39,89	15,02
6. Construction of spare parts of Coaching and Goods stock.	31,71	16,86
7. Construction of Other Stores	92,47	26,62
8. Work done for other Departments, *i.e.*, departments other than that supervising the workshops.	75,53	45,14
9. Engineer's plant	12,20	1,97
10. Permanent way	4,12	45,50
11. Bridge work	9,10	1,18
12. Structural or other engineering works	10,64	22,86
TOTAL	4,05,27	2,14,51

The cost of structural and other engineering works carried out '*in situ*' was—

	(In thousands of rupees.)
Bridge work	1,99,03
Structural and other Engineering works	5,33,27
TOTAL	7,32,30

CHAPTER VI.

STAFF.

79. Number of Staff.—The total number of employees on Indian Railways and in the office of the Railway Board and other offices subordinate thereto (excluding staff employed on construction) at the end of the year 1928-29 was 807,866 as compared with 802,209 at the end of 1927-28. The increase in route mileage during the same period was 1,281 miles. The following table shows the number of employees by communities on 31st March 1928 and 1929.

Year.	Europeans.	Statutory Indians.					Grand Total.
		Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	
1927-28 . .	5,110*	574,715*	179,888*	14,415*	28,081*	797,099*	802,209*
1928-29 . .	**4,988**	**576,345**	**178,474**	**14,416**	**33,643**	**802,878**	**807,866**

The increase of 5,562 under "other classes" is mainly due to the inclusion under this head of "Sikhs" who, in previous years, were included under "Hindus".

80. Cost of Staff.—The following statement shows the number and cost of all staff, superior, subordinate and labourers, permanent and temporary, open line and construction, but does not include figures relating to contractors and their staff, including labourers, working under them, employed on Class I Railways during the years 1927-28 and 1928-29 :—

Railway systems.	1927-28.		Cost of staff.	1928-29.		Cost of staff.
	Number of staff on 31st March 1928.			Number of staff on 31st March 1929.		
	Open line.	Construction.		Open line.	Construction.	
			Rs.			Rs.
Assam Bengal	14,655	1,434	63,39,743	**15,484**	**2,485**	**69,47,580**
Bengal and North Western . .	26,697	...	72,82,815	**27,519**	**45**	**74,71,559**
Bengal Nagpur	65,867	1,228	3,01,06,532	**72,683**	**1,257**	**3,14,83,896**
Bombay, Baroda and Central India	74,405*	2,150	4,58,89,057	**72,628**	**1,356**	**4,49,84,780**
Burma	26,499*	1,561	1,61,96,893	**27,348**	**1,223**	**1,71,52,083**
Eastern Bengal	56,112*	1,669	2,55,31,898*	**57,483**	**2,048**	**2,68,46,704**
East Indian	142,698	8,164	6,95,67,687*	**148,534**	**6,869**	**7,10,53,704**
Great Indian Peninsula . .	123,148	536	5,86,62,205*	**116,773**	**756**	**5,92,23,583**
Jodhpur	7,991	216	26,29,419	**7,387**	**383**	**27,03,502**
Madras and Southern Mahratta .	52,569	5,222	2,52,02,510*	**52,659**	**2,746**	**2,59,26,027**
Nizam's Guaranteed State .. .	13,865	468	55,01,479	**15,320**	**587**	**58,23,763**
North Western	121,297*	6,362	6,74,46,409*	**117,720**	**4,730**	**6,95,02,961**
Rohilkund and Kumaon . .	6,182	...	17,04,378	**6,018**	**...**	**17,27,080**
South Indian	36,663*	1,125	1,93,45,913	**36,332**	**928**	**2,19,41,928**
Total .	768,648	30,135	38,14,06,938*	**773,888**	**25,413**	**39,27,89,150**

* Revised figures.

NORTH WESTERN RAILWAY.

Indian Railway Standard—ZE Type Locomotive—Heavy Goods Type—Narrow-gauge.

The figures of cost include the salaries and wages of staff, bonus contribution to the provident fund, gratuities, overtime allowances, and all other allowances which are of the nature of extra pay and which are not granted to meet some definite expense incurred in the performance of duty, such as travelling allowances.

It will be seen that all Railways show an increase in expenditure, except the Bombay, Baroda and Central India Railway where the net decrease was due principally to the following causes:—

(*a*) Decrease of about Rs. 17 lakhs due to the reduction of labour staff on relaying works and electrification and workshop staff in Locomotive and Carriage Departments.

(*b*) Increase of about Rs. 8 lakhs due to increase in amounts paid on account of gratuities, Provident fund bonuses and appointment of additional running staff for Electric Department.

The increase on other railways, briefly summarised, comes under the heads noted against each:—

Assam-Bengal Railway.—New constructions, increase of pay to officers and subordinates.

Bengal and North Western Railway.—Appointment of extra staff to give effect to the Geneva and Washington Conventions, further strengthening of Travelling Ticket Examiners to avoid travelling without tickets.

Burma Railways.—Appointment of additional staff to comply with Washington and Geneva Conventions, maintaining increased length of line, new constructions, larger payments of gratuity to retiring officers.

Eastern Bengal Railway.—Annual increments and more construction staff engaged.

East Indian Railway.—Larger expenditure on certain constructions, additional staff on account of the reorganisation of the Stores and Engineering Departments and Mechanical Workshops, appointment of additional temporary staff during the strike at Lillooah, and payment of bonus to the loyal staff who worked under extreme pressure in the affected area during the strike period.

Great Indian Peninsula Railway.—Ordinary increments, additional expenditure on new construction and surveys, cost of crew staff.

Jodhpur Railway.—More construction works and larger payments of leave allowances to officers in England.

Madras and Southern Mahratta Railway.—More staff employed on construction and open line works.

His Exalted Highness the Nizam's Guaranteed State Railways.—Increments to staff, additional open line staff consequent on the extension of the line, new construction, etc., additional staff engaged during the strike.

North Western Railway.—New constructions, additional staff on open lines, increments to staff and more leave allowances.

South Indian Railway.—Opening of new lines, extension of crew system, grant of gratuities to workshop staff discharged owing to reduction of establishment.

81. Recruitment of Officers.—During the year nine officers were recruited to the Indian Railway Service of Engineers and seven officers to the Transportation (Traffic) and Commercial Departments by competitive examination in India.

From the selection initiated towards the end of the preceding year twelve special class apprentices were selected early in 1928-29 for the mechanical Engineering, Transportation (Power) and Electrical Departments. The selection of the next annual batch, also of twelve, was completed in February 1929.

82. Indianisation.—The following statement shows by Class I Railways the number of gazetted officers on State-managed Railways and officers of corresponding rank on Company-managed Railways on 1st April 1929, as compared with 1st April 1928. Full details of the numbers by departments will be found in Appendix F which also contains similar information relating to subordinates on scales of pay rising to Rs. 250 per mensem and over.

Statement of gazetted officers on State-managed Railways and officers of corresponding rank on Company-managed (Class I) Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1929 as compared with 1st April 1928.

Name of Railways.	1st April 1928.							1st April 1929.							Increase +, Decrease −						
		Statutory Indians.							Statutory Indians.							Statutory Indians.					
	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.
A. B. . .	52	10	4	7	1	22	74	50	11	5	9	1	26	76	−2	+1	+1	+2	...	+4	+2
B. N. . .	158*	35	5	16	2	58	216*	154	38	5	18	2	63	217	−4	+3	...	+2	...	+5	+1
B. & N. W. .	64	5	...	1	...	6	70	63	6	...	2	...	8	71	−1	+1	...	+1	...	+2	+1
B., B. & C. I. .	143*	22*	3*	14*	13*	52*	195*	139	24	3	13	13	53	192	−4	+2	...	−1	...	+1	−3
Burma . .	105*	7	1	11*	6	25*	130*	104	10	1	12	8	31	135	−1	+3	...	+1	+2	+6	+5
E. B. . .	86*	36*	5	16	5	62*	148*	79	36	7	14	5	62	141	−7	...	+2	−2	...	...	−7
E. I. . . .	213	74	17	56	7	154	367	211	65	16	48	8	137	348	−2	−9	−1	−8	+1	−17	−19
G. I. P. . .	190	28	4	14	10	56	246	191	30	5	10	9	54	245	+1	+2	+1	−4	−1	−2	−1
M. & S. M.	125	29	1	9	3	42	167	117	25	...	8	3	36	153	−8	−4	−1	−1	...	−6	−14
N. W. .	185*	84	21	24	12	141	326*	181	93	23	21	14	151	332	−4	+9	+2	−3	+2	+10	+6
R. & K. . .	11	2	1	...	...	3	14	11	2	1	...	...	3	14	...	...	...	...	...	..	...
S. I. . . .	102	42*	2	5	3*	51	153*	94	43	3	5	4	55	149	−8	+1	+1	...	+2	+4	−4
Railway Board and Miscellaneous officers.	70*	8	2	9*	1	20*	90*	75	20	4	9	2	35	110	+5	+12	+2	...	+1	+15	+20
Total .	1,504*	382*	66*	182	62	692*	2,196*	1,469	403	73	169	69	714	2,183	−35	+21	+7	−13	+7	+23	−13

* Revised figures.

Statement showing percentages of total officers employed.

—	Burma, Eastern Bengal, East Indian, Great Indian Peninsula and North Western Railways.		Total Class I Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways).	
	1st April 1928.	1st April 1929.	1st April 1928.	1st April 1929.
Europeans	64·01*	**63·78**	68·49*	**67·29**
Statutory Indians—				
Hindus	18·82*	**19·48**	17·39*	**18·46**
Muslims	3·94*	**4·33**	3·01*	**3·35**
Anglo-Indians	9·94*	**8·74**	8·29*	**7·74**
Other classes	3·29*	**3·67**	2·82*	**3·16**
Total .	35·99*	**36·22**	31·51*	**32·71**

* Revised figures.

The number of Indians filling gazetted posts increased from 31·51 per cent. to 32·71 per cent. On the five State-managed lines the increase was from 35·99 per cent. to 36·22 per cent.

83. Vacancies among officers and how filled.—In accordance with the practice of the last three years a detailed statement is included as Appendix G of this report showing the number of appointments created and vacancies which occurred among officers of gazetted rank on State-managed railways and of corresponding rank on Company-managed railways and how they were filled in the last two years. These figures are summarised in the tables below, separate statements being given for *permanent* vacancies as distinct from *total* vacancies (temporary as well as permanent).

State-managed Railways.—

Statement showing the number of ***permanent*** *appointments created and vacancies which occurred among officers of gazetted rank on State Railways during the year 1928-29, and how they were filled.*

Item.	No. of new appointments created during the year.	No. of appointments abolished during the year.	No. of vacancies which occurred during the year.	No. of vacancies which occurred in previous years not filled in these years remaining to be filled.	No. of net vacancies to be filled.	No. of vacancies not filled up during the year.	No. of vacancies actually filled.	Filled by					
									Statutory Indians.				
								Europeans.	Hindus.	Muslims.	Anglo-Indians and Domiciled Europeans.	Other classes.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agency	...	2	...	2	...	...	...	...	...	...	...	...	...
2. Engineering	6	...	18	1	25	14	11	4	3	1	3	...	7
3. Transportation and Commercial (Traffic).	1	...	18	8	27	22	5	2	1	...	2	...	3
4. Mechanical Engineering	4	...	9	3	16	5	11	9	1	...	1	...	2
5. Stores Department	2	1	...	2	3	1	2	2	...	...	...	...	...
6. Other Departments	11	...	5	1	17	4	13	1	10	...	1	1	12
7. Total 1928-29	24	3	50	17	88	46	42	18	15	1	7	1	24
7. Total 1927-28	38	...	38	13	89	17	72	23	27	3	16	3	49
8. Percentage of Europeans to No. of vacancies filled, 1927-28	32·0	...	...	...	...	...	...	...	...	...	...	...	...
8. Percentage of Europeans to No. of vacancies filled, 1928-29	43·0	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to No. of vacancies filled. 1927-28	68·0	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to No. of vacancies filled. 1928-29	57·0	...	...	...	...	...	...	...	...	...	...	...	...

Statement showing the ***total*** *number of appointments created and vacancies which occurred among officers of gazetted rank on State Railways during the year 1928-29, and how they were filled.*

Item.	No. of new appointments created during the year.	No. of appointments abolished during the year.	No. of vacancies which occurred during the year.	No. of vacancies which occurred in previous years not filled in these years remaining to be filled.	No. of net vacancies to be filled.	No. of vacancies not filled up during the year.	No. of vacancies actually filled.	Filled by					
									Statutory Indians.				
								Europeans.	Hindus.	Muslims.	Anglo-Indians and Domiciled Europeans.	Other classes.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agency	...	2	...	2	...	...	...	...	...	...	...	...	...
2. Engineering	12	...	18	6	36	25	11	4	3	1	3	...	7
3. Transportation and Commercial.	1	...	18	8	27	22	5	2	1	...	2	...	3
4. Mechanical Engineering	22	..	9	5	36	18	18	16	1	...	1	...	2
5. Stores Department	2	1	...	2	3	1	2	2	...	...	...	...	...
6. Other Departments	13	...	5	2	20	7	13	1	9	...	2	1	12
7. Total 1928-29	50	3	50	25	122	73	49	25	14	1	8	1	24
7. Total 1927-28	56	...	38	27	121	25	96	44	30	3	16	3	52
8. Percentage of Europeans to number of vacancies filled. 1927-28	46·0	...	...	...	...	...	...	...	...	...	...	...	...
8. Percentage of Europeans to number of vacancies filled. 1928-29	51·0	...	...	..	...	...	...	...	...	..	...	...	...
9. Percentage of Statutory Indians to number of vacancies filled. 1927-28	54·0	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to number of vacancies filled. 1928-29	49·0	...	...	...	...	...	...	...	...	...	...	...	...

Of the officers appointed to the permanent establishment during the year, 57 per cent. were Indians as compared with 68 per cent. in 1927-28 and 62 per cent. in 1926-27. Of the total vacancies filled during the year 49 per cent. were filled by Indians as against 54 per cent. in 1927-28, and 47·5 per cent. in 1926-27. The drop in the percentage of Indian recruitment is accounted for by the fact that 20 recruits to the permanent establishment for 1928-29—9 for the Engineering Department, 7 for the Transportation (Traffic) and Commercial Department, and 4 for the Medical Department—joined their duties after 31st March 1929.

If these 20 recruits are taken as having joined in 1928-29, the figures for Indian recruitment will then be as follows :—

	Per cent.
Permanent appointments	71
Total appointments	64

Analysed by branches, and including the 20 recruits referred to above, the percentage of Indian recruitment to the permanent establishment is as follows :—

	Per cent.
To the Engineering Branch	80
To the Transportation (Traffic) and Commercial Branches	83
To the Mechanical Branch	18
To other Branches	94

Two vacancies in the Mechanical Engineering Department were filled by officers of the Engineering Department. By the transfer of these officers and recruiting more than 75 per cent. Indians in the Engineering

Department the deficiency in the recruitment of Indians to the Mechanical Engineering Department was made up to some extent.

Company-managed Railways.—

Statement showing the number of ***permanent*** *appointments created and vacancies which occurred among officers on (Class I) Company-managed Railways, excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways, and how they were filled during 1928-29.*

Item.	No. of new appointments created during the year.	No. of appointments abolished during the year.	No. of vacancies which occurred during the year.	No. of vacancies which occurred in previous years not filled in these years remaining to be filled.	No. of net vacancies to be filled.	No. of vacancies not filled up during the year.	No. of vacancies actually filled.	Filled by					
									Statutory Indians.				
								Europeans.	Hindus.	Muslims.	Anglo-Indians and Domiciled Europeans.	Other classes.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agency	3	...	1	1	5	3	2	1	1	...	..	...	1
2. Engineering	8	3	15	6	26	14	12	6	2	1	3	...	6
3. Transportation and Commercial.	3	...	13	14	30	11	19	5	5	2	4	3	14
4. Mechanical	6	1	7	5	17	4	13	11	2	...	...	...	2
5. Stores	1	...	2	1	4	3	1	1	...	...	...	...	...
6. Other Departments	1	2	10	6	15	4	11	6	5	...	...	...	5
7. Total 1928-29	22	6	48	33	97	39	58	30	15	3	7	3	28
7. Total 1927-28	16	5	47	22	80	35	45	23	11	2	7	2	22
8. Percentage of Europeans to No. of vacancies filled. 1927-28	51·1	...	...	...	...	...	...	...	...	...	...	...	...
8. Percentage of Europeans to No. of vacancies filled. 1928-29	51·7	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to No. of vacancies filled. 1927-28	48·9	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to No. of vacancies filled. 1928-29	48·3	...	...	...	...	...	...	...	...	...	...	..	...

Statement showing the ***total*** *number of appointments created and vacancies which occurred among officers on (Class I) Company-managed Railways, excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways, and how they were filled during 1928-29.*

Item.	No. of new appointments created during the year.	No. of appointments abolished during the year.	No. of vacancies which occurred during the year.	No. of vacancies which occurred in previous years not filled in these years remaining to be filled.	No. of net vacancies to be filled.	No. of vacancies not filled up during the year.	No. of vacancies actually filled.	Filled by					
									Statutory Indians.				
								Europeans.	Hindus.	Muslims.	Anglo-Indians and Domiciled Europeans.	Other classes.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Agency	5	...	...	1	6	3	3	2	1	...	...	...	1
2. Engineering	18	30	40	16	44	23	21	8	7	1	4	1	13
3. Transportation and Commercial.	3	...	13	15	31	13	18	5	4	2	4	3	13
4. Mechanical	7	1	8	5	19	4	15	13	2	...	...	...	2
5. Stores	1	...	2	1	4	3	1	1	...	...	...	...	...
6. Other Departments	3	3	15	7	22	7	15	7	6	...	2	...	8
7. Total 1928-29	37	34	78	45	126	53	73	36	20	3	10	4	37
7. Total 1927-28	45	17	71*	37	136*	48*	88	43	24*	4	13*	4	45
8. Percentage of Europeans to number of vacancies filled. 1927-28	48·9	...	...	...	...	...	...	...	...	...	...	...	...
8. Percentage of Europeans to number of vacancies filled. 1928-29	49·3	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to number of vacancies filled. 1927-28	51·1	...	...	...	...	...	...	...	...	...	...	...	...
9. Percentage of Statutory Indians to number of vacancies filled. 1928-29	50·7	...	...	...	...	...	...	...	...	...	...	...	...

*Revised figures.

Taking all the Company-managed Railways together the percentage of Indians appointed to the total number of vacancies during 1928-29 was practically the same as during 1927-28. Of the vacancies in permanent appointments 48·3 per cent. were filled by Indians as against 48·9 per cent. in 1927-28. If temporary posts are also taken into account the percentage was 50·7 against 51·1 in 1927-28.

84. As regards the higher subordinate grades a detailed statement will be found in Appendix F showing by railways, the number of employees on scales of pay rising to Rs. 250 and over on the 1st April 1929, as compared with 1st April 1928. A summary of the figures is given below :—

Statement of Subordinates on scales of pay rising to Rs. 250 per mensem and over on Class I Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1929 as compared with 1st April 1928.

Name of Railway.	1st April 1928.							1st April 1929.							Decrease —						
		Statutory Indians.							Statutory Indians.							Statutory Indians.					
	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.	Europeans.	Hindus.	Muslims.	Anglo-Indians.	Other classes.	Total.	Grand Total.
A. B. . .	23*	27	3	40*	8*	78	101*	23	29	4	41	7	81	104	...	2	1	1	−1	3	3
B. N. .	317	171	13	380	9	573	890	273	174	12	378	15	579	852	−44	3	−1	−2	6	6	−38
B. & N. W. .	30	13	5	59	1	78	108	28	16	5	60	1	82	110	−2	3	...	1	...	4	2
B., B. & C. I. .	149	259	30	381	159	829	978	141	270	29	380	223	902	1,043	−8	11	−1	−1	64	73	65
Burma .	19	98*	13*	248	51*	410	429	24	109	11	260	58	438	462	5	11	−2	12	7	28	33
E. B. . .	108	141	9	188	11	349	457	106	158	9	199	8	374	480	−2	17	...	11	−3	25	23
E. I. . . .	594	419	43	1,009	10	1,481	2,075	615	464	52	1,020	16	1,552	2,167	21	45	9	11	6	71	92
G. I. P. . .	305	217	36	742	157	1,152	1,457	312	190	37	732	149	1,108	1,420	7	−37	1	−10	−8	−44	−37
M. & S. M..	75	36	2	176	15	229	304	82	40	1	166	16	223	305	7	4	−1	−10	1	−6	1
N. W. . .	362*	374*	162*	356*	95*	987*	1,349*	387	396	182	344	147	1,069	1,456	25	22	20	−12	52	82	107
R. & K. . .	7	4	1	12	1	18	25	6	4	1	12	1	18	24	−1	...	...	...	...	...	...
S. I. . . .	52*	75	3	176*	7	261*	313	48	88	4	185	9	286	334	−4	13	1	9	2	25	21
Railway Board and other railway offices.	5	87*	10	17*	12*	126*	131*	6	130	13	23	12	178	184	1	43	3	6	...	52	53
Total .	2,046*	1,921*	330*	3,784*	536*	6,571*	8,617*	2,051	2,068	360	3,800	662	6,890	8,941	5	147	30	16	126	319	324

*Revised figures.

Statement showing percentages of total senior subordinates employed.

	Burma, Eastern Bengal, East Indian, Great Indian Peninsula and North Western Railways.		Total Class I Railways (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways).	
	1st April 1928.	1st April 1929.	1st April 1928.	1st April 1929.
Europeans	24·07*	**24·13**	23·74*	**22·94**
Statutory Indians—				
Hindus	21·66*	**22·01**	22·29*	**23·13**
Muslims	4·56*	**4·86**	3·83*	**4·03**
Anglo-Indians	44·09*	**42·69**	43·92*	**42·50**
Other classes	5·62*	**6·31**	6·22*	**7·40**
Total .	75·93*	**75·87**	76·26*	**77·06**

* Revised figures.

During the year there was an increase of 319 in the number of Indians holding these posts and an increase of 5 Europeans. More than three-quarters of the posts are now held by Indians.

85. Training of Staff.—During the year the following courses were held at the Railway School of Transportation, Chandausi :—

For Senior Scale Officers.—Three short courses of 6 days each. These were chiefly a demonstration of the work done at the school. A large part of the value of these courses lies in the interchange of experience and ideas between the senior officers of the various Railways.

For Commercial Officers.—One course of twenty lectures on each of the following subjects :—

Railway economics, accounts, and commercial working.

Senior Courses.—Seven courses of 30 days each for junior officers and transportation staff on Rs. 200 per mensem and over.

Junior Courses.—Six courses of 30 days each for transportation subordinates.

Area Courses.—Six courses of 21 days each for Assistant Station Masters of the East Indian Railway.

Probationer Signallers' Courses.—Three courses of nine months each for East Indian Railway probationers.

Cabinmen's Courses.—Three courses of 14 days each for cabinmen of the Lucknow and Moradabad Divisions of the East Indian Railway.

Illiterate Drivers' Courses.—Seven courses of 21 days each for illiterate drivers of the Lucknow and Moradabad Divisions of the East Indian Railway.

Educational Equipment—was very fully described in the report for 1927-28. It has only been slightly modified during the year. In the Transportation Model Room the junction leading to a terminal loop at the point where the single line commences, mentioned in the last report as being in hand, has been brought into use and has proved valuable.

The current for the track, and block instruments (30 volts and 14 volts respectively) was formerly supplied by accumulators, which had to be recharged at intervals from the main electrical supply. A rotary converter has now been installed which can either charge the accumulators or supply current direct to the track and block instruments. This arrangement is far more satisfactory than the old one.

Asansol Area School.—Switchmen have been receiving training during the whole year, and only one man failed to qualify at the end of this course. This training of switchmen meets a long-felt want, as hitherto such employees had to pick up their work in cabins where they were in practice handling block instruments, without any experience and authority.

A further innovation has been the training of men without any previous railway experience, for whom one course of three weeks and two of four weeks each were specially held to meet the demand for additional staff, consequent on the opening of the Central India Coalfields Railway.

The School equipment was improved during the year by the provision of a vacuum pump and a pipe connection to the vaccum fitted "Instruction Carriage". Suitable gauges and two Guards van valves were provided so that a complete demonstration of the action of the brake can now be given, and much valuable information imparted to students in regard to the brake power available when working on low vacuum. In the Transportation Model Room the track and fittings, which have been in use since 1921, require reconditioning. Plans were under preparation to bring the stations into line with modern practice, enlarge the gauge from 2″ to $2\frac{1}{2}$″, and work the trains electrically.

Lyallpur Area School.—In last year's report reference was made to the decision to move this school to Kot Lakhpat (near Lahore) where a suitable and inexpensive site had been selected. The opening of the commercial classes at Kot Lakhpat from the 2nd January 1929, was the first step for the gradual transfer of the school from Lyallpur. At the close of the year under

review substantial progress had been made in the construction of the new school buildings and quarters for the staff and students.

The school at Lyallpur has been provided with a set of large maps to facilitate instructions on the subject of routing of traffic, a matter which, it is recognised, is of first class importance in the training of students who will be concerned with the booking of traffic.

Bina Area School.—The model room has been improved by the substitution of a $2\frac{1}{2}''$ gauge track for the present $3''$ track. There are thirteen stations on the model railway, of which eleven are models of the common wayside stations on the Great Indian Peninsula Railway. The various types of block instruments actually in use on the Great Indian Peninsula Railway are found in the model room.

A full size facing point lay-out has been provided, complete with signals and all interlocking gear worked from a ground frame.

Madras and Southern Mahratta Railway.—A total of 515 men were sent to the Traffic Training School at Madras for training, against 485 men sent last year. 39 courses were held as against 26: two of these being special courses: one, in consequence of the installation of Sykes' three position lock and block instruments; the other, owing to the necessity for finding staff trained in this system for stations on lines under construction.

During the year under review, lectures on special subjects have been delivered at the various head-quarter stations. The first of these had reference to a new set of engineering speed restriction signals which had recently been introduced. The lecture was first delivered at the Traffic Training School, Madras, and repeated at Bangalore City, Hubli, Guntakal and Bezwada. Special lectures were also given at Bangalore City and Hubli on the revised General Rules for open lines of railways which were to be adopted on State-managed Railways from the 1st July 1929, and on the Madras and Southern Mahratta Railway a few months later. Six special lectures on Sykes' three position lock and block instruments were also given to senior Station Masters and Upper Subordinates.

86. Assistance to Railway employees for education of their children.—The Railway Board have had under their consideration for some time past the desirability of formulating a definite policy which could be followed by all railway administrations in regard to the assistance that should be given to railway employees for the education of their children. The forms in which such assistance has been given in the past have been varied. As a first step it was necessary to obtain a clear appreciation of the present position. With this object Mr. C. E. W. Jones, C.I.E., of the Indian Education Service, was placed on special duty under the Railway Board in 1926 with instructions to collect and collate all the relevant facts and figures and to submit a report on the subject.

Mr. Jones' report has been received and it reviews the various forms of assistance given by railway administrations in the matter. The subject was discussed with the Central Advisory Council for Railways in September 1928, and the lines of future policy from the railway point of view settled. The general policy as accepted by the Central Advisory Council has been circulated to Railways who have been asked to prepare an estimate of cost and to suggest modifications, if any. The subject has also been referred to Local Governments who have been asked to furnish their views in the matter.

87. Railway Staff College, Dehra Dun.—The Railway Staff College at Dehra Dun is now nearing completion. It is anticipated that the College will be opened for the instruction of railway officers by the end of 1929.

88. Labour Position on Indian Railways.—During the period under review three strikes occurred one on each of the following railways:—*Viz.*, the East Indian, South Indian and His Exalted Highness the Nizam's Guaranteed State Railways. The strike on the East Indian Railway which started on the 7th March 1928, with the trouble in the Lillooah

workshops lasted up to the 10th July with subsidiary strikes at Howrah, Ondal and Asansol. On the 30th of July the men in the Lillooah shops again downed tools and resorted to disorderly behaviour as a result of the circulation of an unfounded statement that the Agent had promised to redress their grievances. The shops were closed. The Agent issued a notification on the 6th of August that the pay of certain classes of lower paid workmen in the Lillooah shops would be increased with effect from the 1st August 1928 and that an investigation would be made into the housing conditions at Lillooah. He also announced his intention of opening the shops on the 8th August 1928. The men resumed work on the 8th August and there has been no disturbance since.

With the exception of the serious disaster at Dankuni where an express train was derailed owing to a rail having been removed, no serious inconvenience was caused during the strike to the travelling public. But as a result of the derailment the engine and five coaches of the train were badly smashed up and 18 passengers were killed and 32 injured. There was one other serious incident in connection with this strike. This happened at Bamangachi where on account of the disorderly behaviour of the workmen and their attempt to induce men to down tools in the locomotive yard, the Police were compelled to fire.

The trouble on the South Indian Railway started on the 29th of June when the workshop staff at Golden Rock, Negapatam and Podanur downed their tools because the Agent had announced his intention of reducing the number of workshop men by 3,171 men. These men were found surplus to requirements owing to the proposed concentration of the workshops of the railway at Golden Rock, and the introduction of the labour saving devices. A general strike was declared on the 19th of July and spread throughout the metre gauge portion of the South Indian Railway. It lasted till the 30th July. During the short period of the strike there was great dislocation of traffic, and the public were seriously inconvenienced by the strikers attempting to interfere with the running of trains. There was also considerable rioting and stone-throwing, and the Police were compelled to open fire on the crowd on two occasions. At Kattupakkam and Kodaikanal Road on the 21st and 23rd July respectively owing to the malicious tampering with the permanent-way, two passenger trains were derailed. Three passengers were killed and 42 were injured, and the railway suffered a loss of about Rs. 2,19,000 in damages to rolling stock, permanent-way, buildings, etc.

The strike in the locomotive, carriage, and Engineering shops on His Exalted Highness the Nizam's Guaranteed State Railways was confined mostly to unskilled labourers. It was not of a serious nature and lasted for about 30 working days in all. The men first struck work on the morning of the 16th of August and resumed work on the 24th idem. They again struck work on the 11th September and finally resumed work on the 8th of October. The causes of this strike are obscure.

89. Punishment of staff.—A new system of punishments for the staff on the line was introduced by the Jodhpur Railway in January 1929. Under this system fines are not considered as the standard form of punishment, but instead a "caution" system has been adopted for minor offences If an employee is found to have more than 30 "cautions" recorded against him during the course of a year, he is reduced one step in grade. More serious offences are met by the stoppage of increment or a reduction in pay at the discretion of the officer dealing with the case.

90. New Institutes for the staff.—An up-to-date Institute for the Europeans and Anglo-Indian staff was provided at Golden Rock on the South Indian Railway. The building comprises a main entrance hall, stage with two green rooms attached, reading and billiard rooms, and in addition a roof garden immediately over the main entrance hall. This hall when used as a theatre is capable of seating 450 people. The dancing floor has been mounted on springs and can accommodate about 150 couples. The Institute has also been provided with a cinema where cinematograph films are exhibited twice

a week. The Institute grounds have been designed to accommodate six tennis courts, of which three have already been provided. There is also a large recreation ground for hockey, football and cricket. It was originally intended that this Institute should be common to Europeans, Anglo-Indians and Indians, but on a very largely supported representation by Indian members it was decided to build a separate Institute for them where they would be free to congregate and enjoy their own social customs. Good progress had been made in the construction of this Institute at the close of the year.

CHAPTER VII.

MISCELLANEOUS.

91. Extension of conveniences and facilities for the travelling Public.—Much has been done within recent years to improve the conditions of travel in India by increasing the number of and accommodation on trains over various sections according as the demand for such extensions have become manifest, and, at the same time, continuing the policy of providing such conveniences as make for more comfortable travel for all classes. The extent to which these facilities and conveniences have been provided in past years have been mentioned in previous reports, and similar information for the year under review is furnished below:

Progress in these directions is of necessity limited by the amount of funds available.

Train Services.

Assam Bengal Railway.—Mail trains between Pandu and Tinsukia were introduced to connect with the mail trains of the Eastern Bengal Railway.

Bengal and North-Western Railway.—On several sections the train services were augmented in September 1928 by the provision of an additional train in each direction.

Bengal Nagpur Railway.—Sentinel Coach Services were introduced between Jubbulpore and Gowarighat and on other sections where traffic conditions warranted their use. Additional trains were also run over certain other sections.

Bombay, Baroda and Central India Railway.—An increase in passenger trains, aggregating to an extra 1,946 train miles per day on the broad gauge, and 925 train miles per day on the metre gauge, was effected and other important services were accelerated.

Burma Railways.—From 1st February 1929 three more trains in each direction were put on between Pegu and Paungdawthi and one each way between Henzada and Yegyi and Yegyi and Bassein. Additional mixed trains were also introduced over some sections and certain mixed trains were converted into fast trains on others.

Eastern Bengal Railway.—Both over the broad and metre gauge sections the train services were increased. The Assam Mail was diverted from the *viâ* Santahar route to the *viâ* Parbatipur route. A steam coach, which was introduced as an experimental measure between Parbatipur and Dinajpur, was subsequently transferred to the Lalmanirhat-Rangpur section, where it has been doing two trips a day in each direction.

East Indian Railway.—The additional passenger train services amounted to 664 train miles per day, exclusive of an increase of 152 miles run by Sentinel coaches.

Great Indian Peninsula Railway.—Apart from the increase in the train services on several short sections of the line, a Sentinel Coach service was introduced between Katol and Nagpur, Wardha and Nagpur and Lonavla and Poona. On the Badnera Amraoti section seven extra mixed trains in each direction were introduced from 1st December 1928.

Madras and Southern Mahratta Railway.—Several additional trains were added to the existing train services, principally on the metre gauge section.

His Exalted Highness the Nizam's Guaranteed State Railways.—A through Express train was introduced from 1st October 1928 between Secunderabad and Bangalore, *viâ* Guntakal.

North Western Railway.—Sentinel Coaches were run over the Gojra-Lyallpur and Lyallpur-Jaranwala sections from January 1929, in addition to the augmentation of train services on several comparatively short sections. An extra train in each direction was introduced between Peshawar and Delhi, *viâ* Bhatinda.

South Indian Railway.—Four additional trains were introduced between Chingleput and Conjeevaram and one mixed train each way between Mangalore and Cannanore. The Blue Mountains Express running between Madras and Ootacamund was introduced from 15th March 1929.

Improvements in Internal Fittings of Carriages.

Assam Bengal Railway.—309 lower class carriages were fitted with water tanks.

Bengal and North-Western Railway.—All Intermediate and Composite Inter and Third class carriages were fitted with an extra water tap in the latrines.

Bengal Nagpur Railway.—In the new bogie composite carriages built during the year centre seats have not been provided in second class compartments. An improved and more comfortable seat is being fitted in future in all third class bogie carriages.

Bombay, Baroda and Central India Railway.—The policy of converting gas lit stock into electric lighted stock with the ultimate object of completely eliminating gas or oil lighting throughout the system was energetically pursued, and a large number of passenger carriages were accordingly fitted with electric light.

Steps were taken to provide an additional fan in each first class compartment, and reading lamps at the head of each berth.

Special attention was paid to the improvement of latrines in lower class stock in regard to the following points:—

(*a*) improving sanitation by raising the seats and sloping the panel suitably so as to provide a better flow for water;

(*b*) fitting larger water tanks;

(*c*) fitting small shelves and hooks for coats, etc.;

(*d*) improving the lighting arrangements.

Eastern Bengal Railway.—Action was taken for the introduction of the following improvements on all vehicles passing through the workshops:—

(*a*) increasing the width of seats in all lower class suburban carriages;

(*b*) providing enamelled iron latrine pans in the latrines of lower class carriages;

(*c*) stuffing all upper class upholstery with cotton instead of coir;

(*d*) extending the provision of reading lamps to all upper class stock.

A first and second class parlour car was put on for the Calcutta suburban traffic to Barrackpore. The car is provided with a buffet, which was largely patronised, particularly on race days.

Great Indian Peninsula Railway.—Considerable progress was made in the work of converting coaching stock from gas to electric lighting, over 160 vehicles having been so converted during the year.

His Exalted Highness the Nizam's Guaranteed State Railways.—Convertible European and Indian type commodes were fitted in one composite carriage, as an experimental measure.

North Western Railway.—Four composite first and second class 2′ 6″ gauge carriages of an improved type were brought into use on the Kalka-Simla section.

Upper berths in intermediate class carriages were upholstered with imitation leather as the vehicles passed through the workshops.

Rohilkund and Kumaon Railway.—A commencement was made in the matter of painting white the inside of the roofs of all third class passenger stock. This, it is reported, has added 10 per cent. to the lighting effect.

South Indian Railway.—On the broad gauge night lights have been provided in 14 upper class coaches.

On the metre gauge night lights were provided in 25 bogie upper class coaches and an additional light was fitted in each compartment of 43 bogie third class carriages.

Supply of Drinking Water.

Assam Bengal Railway.—A Jewel filter was installed at one station.

Bengal and North-Western Railway.—Tube wells for the supply of drinking water to passengers were put in at Muzaffarpur, Darbhanga and Raxaul.

Two hydrants were provided on the island platform at Ballia, and seventy-five extra watermen employed during the hot weather.

The following systems for the supply of water to passengers were tried experimentally:—

(A) Watermen in trains with water in earthen chatties, in large galvanised iron tanks and in ordinary buckets.

(B) Watermen in trains, the water being kept ready at stations for them.

(C) Watermen kept at stations about one hour's journey apart with water ready to supply to passengers.

System (A).—Proved unsatisfactory on the whole. Compartments were reserved in trains for the watermen and water carried by them there. Although the water was kept ready at stations to replenish the tanks with cool water, before long the water was too hot to be used. Earthenware chatties were then tried and, although trouble was occasioned from breakages, cool water was available. The travelling public, however, objected to use the water unless a special carriage or a whole compartment of a bogie coach was set aside, on the grounds that the water became polluted through passengers of low caste being in the same compartment of the coach.

System (B).—About one dozen earthenware chatties, each holding about one gallon of water, as well as six buckets, were kept ready at each station before the arrival of a train. However, trouble on account of caste prejudices recurred.

System (C).—At watering stations, about one hour's run apart, water was kept in buckets and at certain important stations two or three tanks of water each holding 40 gallons were kept ready, with men of suitable caste to serve water to passengers on arrival. This system proved successful, and did away with complaints except on the score of caste.

Bengal Nagpur Railway.—Drinking water shelters were provided at five stations and water taps at one.

Bombay, Baroda and Central India Railway.—The strength of watermen employed at stations and on travelling duty was augmented.

Additional water taps were provided at three stations and water shelters at two others.

An electric water cooler was put in at Ahmedabad as an experimental measure.

Eastern Bengal Railway.—Rs. 87,000 were spent during the year in improving the water supply at twenty-eight stations by the installation of tube wells, the provision of water taps on platforms and by effecting connection with municipal water mains.

East Indian Railway.—Water taps were provided in the third class waiting hall at Patna and a reinforced concrete cool drinking water tank constructed at Cawnpore City.

Great Indian Peninsula Railway.—A high service tank with water tap connections was provided at one station and stand pipes on the passenger platform at two others.

Water shelters were erected at five stations.

Jodhpur Railway.—Water taps were provided at one station and water shelters at Jodhpur and Luni Junctions.

Madras and Southern Mahratta Railway.—Additional water taps were provided on the platform at 61 stations on the broad gauge and at 95 stations on the metre gauge. In addition, taps were put in the waiting halls at Madras Central, Arkonam, Katpadi, Jalarpet, Bowringpet and Bangalore City.

His Exalted Highness the Nizam's Guaranteed State Railways.—Water shelters were provided at several stations on the broad gauge sections and on the Hyderabad-Godavari-Valley line.

North Western Railway.—Water shelters were provided at several stations and water taps at four stations. Tube wells were installed at fourteen stations.

Rohilkund and Kumaon Railway.—Forty-one watermen were appointed as a permanent measure and thirty-seven temporarily for the hot weather months.

Water hydrants were provided at Lucknow Junction and tube wells put in at three other stations.

South Indian Railway.—Water taps were provided on the platform and in certain sheds at Chingleput and on the platforms at two other stations.

Refreshment Rooms, etc.

Assam Bengal Railway.—Vendor's stalls for Hindus and Muhammadans were provided at ten stations.

Bengal and North-Western Railway.—Hindu and Muhammadan refreshment rooms were opened at Darbhanga and four stations now have these rooms.

Bengal Nagpur Railway.—Refreshment stalls and kitchens were provided at nine stations and tea stalls at eight others. Refreshment rooms are being built at four other stations.

Jodhpur Railway.—Hindu and Muhammadan refreshment rooms were opened at Mirpur Khas.

Bombay, Baroda and Central India Railway.—Several new Hindu and Muhammadan tea and refreshment stalls were built, either to replace unsatisfactory types or as additions to those already at the station. A small new type of stall is being erected at Dahanu Road as an experiment, and, if found satisfactory, will be adopted as a standard in place of tables or temporary stalls for those stations where, owing to the comparatively small business offering, stalls of the standard type are now called for.

Eastern Bengal Railway.—A refreshment room for lower class Muhammadan passengers was opened at Rajbari.

Several standard pattern tea stalls were installed at the smaller stations in order to meet the growing demand for tea from third class passengers.

East Indian Railway.—Hindu and Muhammadan refreshment rooms were provided at Fyzabad and Allahabad and similar rooms are under construction at Mirzapur and Asansol.

Great Indian Peninsula Railway.—A light refreshment room for upper class passengers was opened at Nasik Road. Hindu and Muhammadan tea, fruit and food stalls were provided at Dadar, and separate refreshment rooms built at the new station at Victoria Terminus, where meals are served both in the European and in the Indian style.

North Western Railway.—Cars for vendors were run, for the first time on this railway, on the up and down Punjab-Bombay (Colaba) Express trains between Lahore and Delhi.

South Indian Railway.—Satisfactory progress was made during the year in the catering arrangements for Indian passengers. The Indian refreshment room at Tiruturaipundi, which was previously managed by a licensee, was taken over by the Catering Department. A new refreshment room was built for Hindus and Mahomedans at Shoranur. The Hindu refreshment room is now being worked departmentally and the Mahomedan refreshment room has been leased to a Contractor (on the license fee system). In addition, an Indian light refreshment room opened at Chidambaram is being managed departmentally. There are now 16 rooms in all under the Railway Company's management against 13 at the close of last year.

Waiting Rooms, etc.

Assam Bengal Railway.—A third class waiting hall was provided at one station and the existing accommodation for third class passengers at two other stations was extended. Waiting rooms for lower class female passengers were provided at seven stations.

Three new waiting halls were constructed and 18 waiting halls were extended. A regular programme for providing waiting accommodation was drawn up in 1926-27 and 18 sheds, started in 1927-28, were completed in the year under review at a cost of Rs. 45,000. Advantage was also taken of the remodelling of certain stations to provide extra waiting accommodation and during the year under review the accommodation at seven stations was taken in hand at a cost of Rs. 70,000, of which Rs. 40,000 was spent in 1928-29.

A waiting room for first class passengers was opened at one station.

Bengal and North-Western Railway.—Waiting halls for third class passengers were provided at three stations, and at one of these, *viz.*, Tahsil Deoria, a waiting room for Indian ladies was also provided.

Waiting rooms for upper class passengers were provided at Colonelganj.

Bengal Nagpur Railway.—Waiting rooms for ladies were provided at two stations and halls for third class passengers at nine other stations.

Bombay, Baroda and Central India Railway.—Waiting halls were provided at seven stations, and the existing halls at six others were extended. Action was also taken to substitute a better type of flooring at two stations.

Waiting rooms were provided at two stations, and an extra waiting room at Bilimora.

Burma Railways.—Eleven new waiting sheds were constructed, and nine were extended, at a total cost of approximately Rs. 1 lakh.

Eastern Bengal Railway.—Inter and third class ladies' waiting rooms were provided at eleven stations at a cost of Rs. 19,000, and a further sum of Rs. 9,100 was spent in the provision of new waiting halls or extension to existing ones at four stations.

East Indian Railway.—Waiting halls were provided at two stations, and ladies' waiting rooms at two other stations, whilst the conveniences in smaller halls at two others were improved.

Great Indian Peninsula Railway.—Waiting halls for third class passengers were provided at five stations, and the existing halls at two others extended.

A first and second class waiting room was provided at Sanchi.

Jodhpur Railway.—Passenger halls were provided at six stations and waiting rooms at three stations.

Madras and Southern Mahratta Railway.—Third class waiting halls at ten stations were extended and new halls provided at three other stations.

A special waiting room for Gosha ladies was provided at Renigunta.

His Exalted Highness the Nizam's Guaranteed State Railways.—An upper class waiting room was provided at Sailu, and one at Mahbubnagar is under construction.

North Western Railway.—Waiting halls were provided at seven stations. An inter class ladies' waiting room was put in at Bhatinda, and various additions to and alterations in the existing waiting rooms were made at five stations.

A waiting room for upper class Indian passengers was opened at Dalowali. An upper class waiting room for ladies was provided at Larkana and a general waiting room built at Shahgai.

South Indian Railway.—A third class waiting hall was provided at one station and the existing accommodation for third class passengers at nine others was extended.

Extra waiting rooms were provided for upper class passengers at eight stations, and separate accommodation for Gosha ladies at one, *viz.*, Porto Novo.

Provision of Benches.

Assam Bengal Railway.—Twelve benches were provided.

Bengal Nagpur Railway.—Benches were provided at Khargpur and Tatanagar and at three stations in the Colliery District.

Bombay, Baroda and Central India Railway.—A large number of reinforced concrete benches with wooden backs and seats were provided at all stations on the suburban section.

At twenty other stations additional benches were provided; at one station alone, *viz.*, Dakor, the number provided being eighteen.

Burma Railways.—55 benches were provided for 15 stations.

East Indian Railway.—Nine wooden benches were supplied to five stations, and masonry benches were being provided at thirty-four stations.

Great Indian Peninsula Railway.—Eight additional benches were provided at stations on the suburban section.

Madras and Southern Mahratta Railway.—Twenty-nine additional benches were placed in third class waiting halls.

North Western Railway.—Additional benches were provided on a generous scale at 46 stations.

In addition to the above two double benches 60 feet long were provided in the third class waiting hall at Badami Bagh, four single benches seventy-five feet long and one double bench thirty-five feet long were provided at Shahdara.

Rohilkund and Kumaon Railway.—Six benches were supplied to four stations.

South Indian Railway.—Additional benches were provided in third class waiting halls at four stations and on the platform at one station.

Opening of new Stations and City Booking Offices.

Apart from stations on new lines opened for traffic during the year, additional stations were opened in areas which have had the benefit of railway communications for some years, and have developed sufficiently to justify the provision of additional facilities. Similarly, railways have been opening City booking offices for the issue of tickets to passengers, and in some cases, for dealing with parcels traffic also. Below are brief particulars of what has been done by the principal railways in this respect during the year under review:—

Assam Bengal Railway.—Two flag stations were opened.

Bengal Nagpur Railway.—Seven new stations were opened, and a City booking office provided at Kidderpore (jointly with the East Indian Railway) and at Bhowanipore.

Bombay, Baroda and Central India Railway.—Nine new flag stations were opened and at five existing flag stations waiting sheds were being provided.

Battery Locomotive in use at Carnac Bunder.

Burma Railways.—Three new stations and two City booking offices were opened.

Eastern Bengal Railway.—One flag station on the broad gauge and two on the metre gauge and an additional City booking office in Calcutta were opened.

East Indian Railway.—Two flag stations were opened and a City booking office provided at Burdwan.

Great Indian Peninsula Railway.—Two flag stations were opened, and Bombay was provided with an additional City booking office, *viz.*, in Girgaum.

Madras and Southern Mahratta Railways.—One station on the broad gauge and two on the metre gauge were opened, and a City booking office provided in Sholapur town. Two additional City booking offices were opened in Madras, *viz.*, one in Esplanade Town and the other in Triplicane Town.

Out-agencies were also opened at Narasapur and Razole.

North Western Railway.—One flag station was opened and City booking offices provided in Multan City and Amritsar. Two additional City booking offices were opened in Delhi (jointly with the Great Indian Peninsula, Bombay, Baroda and Central India and East Indian Railways).

South Indian Railway.—Four stations were opened and an out-agency provided at Dharapuram.

Enquiry Offices and Passenger Guides.

Bengal Nagpur Railway.—An enquiry office was provided at Khargpur.

Eastern Bengal Railway.—Enamelled plates showing business hours of booking offices have been put up at several stations and arrangements have been made to supply all stations with similar plates.

English and vernacular fare tables in glass fitted frames are being put up at stations.

South Indian Railway.—Enquiry offices were opened at various pilgrim centres. These were located centrally, generally in or near the temple premises.

92. Flood Damages.—Except as regards the Burma and the Madras and Southern Mahratta Railways, the extent of the damage caused by floods and the duration of restrictions on traffic that were imposed in consequence were not very serious during the year under review. In the following paragraphs brief particulars are given of the effect of floods on the several railways, that call for notice:—

Bengal Nagpur Railway.—The Parvatipuram Branch was breached and all traffic stopped for two days in October 1928.

Bengal and North-Western Railway.—Two piers of a canal bridge between Gaunaha and Amolwa were washed out by floods, necessitating a suspension of the train service between Narkatiaganj and Gaunaha from the 7th to the 12th July 1928.

Burma Railways.—The following were the more important breaches:—

Between Kanbalu and Thityabin from 1st to 9th June 1928.
,, Kanbya and Ye-U from 4th June to 4th September 1928.
,, Tantabin and Madaunghla from 30th June to 30th July 1928.
,, Ywataung and Myinmu from 7th to 15th July 1928.
,, Myingatha and Kinu from 8th to 18th July 1928.
,, Tantabin and Tangon from 8th to 27th July 1928.
,, Monywa and Alon from 19th to 24th August 1928.
,, Tonbo and First Reversing Station from 22nd to 29th August 1928.
,, Sintaung and Myindaik from 24th to 29th August 1928, and again from 18th to 23rd October 1928.

A breach between Padu and Ketka, which occurred on the 22nd August 1928, continued to the close of the year.

Bombay, Baroda and Central India Railway.—Dholka-Dhandhuka Section.—This section which had been very severely breached in the rains of 1926-27 was again breached in 1928. The floods during the two previous years had shown the necessity for providing a large number of additional waterways, and an extensive scheme of new bridges and culverts and protective pitching was accordingly put in hand. Work on these was being pushed through when, rather earlier than usual, heavy rain started, on the 4th and 5th July, which made further progress impossible and the section from Bhurkni to Dhandhuka had to be closed to traffic till the end of the monsoon. As the cost of construction of an adequate number and length of high level bridges to provide the required waterways would have been prohibitive, four long low level " dips " have been constructed instead. These have been provided with pipe drains at several places at the lowest section of the " dips " to provide a passage for all ordinary floods. The dips have been pitched at their lowest points with heavy stone rubble on both sides to allow higher floods to pass over them without causing any considerable damage. During floods, the line may have to be closed for traffic for a few days at a time.

Agra Branch.—Very heavy rain fell on the Bandikui-Nadbai section from the 23rd to 25th October 1928: the gauge recording 20 inches in two days, of which 6 inches fell in 8 hours and another 6 inches in 4 hours. The weir of the Reni bund, the bursting of which had caused serious damage to the line at various places on the Agra Branch in 1924, gave way on 24th October 1928 and a breach occurred between Ghosrana and Kherli over a length of about 100 feet, with scour holes 9 to 10 feet deep, indicating the great velocity of the flood water passing through the breach. Traffic had to be suspended for nearly four days.

The station yard at Mahua Road station was flooded and several quarters were under water.

Eastern Bengal Railway.—A few breaches of minor importance occurred on the broad gauge, but these did not cause any interruption to traffic.

East Indian Railway.—The encroachment of the river Gogra at Barhamghat necessitated the closing of the Burhwal-Bahramghat Branch from the 25th August to the 5th October 1928.

Jodhpur Railway.—An abnormal fall of rain resulted in the line near Rohat being breached on the 5th July 1928 in four places, necessitating the suspension of through traffic for three days.

Madras and Southern Mahratta Railway.—Very serious damage by flood was experienced on the North East Line in October 1928 between miles 367 and 485. The cause of this was the abnormally heavy rainfall experienced in this neighbourhood on the 21st and 22nd October. On the 21st, Yellamanchilli recorded 13 inches of rain, Tuni 15 and Cocanada 6. On the 22nd, Vizagapatam had 10½ inches and Cocanada 6. The first serious breach was near Yellamanchilli on the 21st and 1 down Madras-Calcutta mail and 33 down passenger train were detained at Tuni and subsequently marooned there by further breaches south of Tuni. The passengers of these two trains were completely cut off and held up at Tuni for several days before they could be evacuated. In attempting to reach these marooned trains and the breaches beyond them, a distressingly unfortunate accident occurred, in which two railway officers, *viz.*, Messrs. Taverner (District Traffic Superintendent) and Temple (Assistant Traffic Superintendent), and a fireman were drowned owing to the engine on which they were travelling collapsing into a breach. The District Engineer who was also travelling on the same engine, the driver and the 1st fireman were also precipitated into the breach, but were saved.

Further breaches occurred on subsequent dates throughout this section and on the Samalkot-Cocanada line. The repairs to these breaches took a considerable time to effect, and it was not until 23rd November that a normal service throughout the damaged section was restored.

His Exalted Highness the Nizam's Guaranteed State Railways.—Heavy rainfall on the Asifabad Road-Balharshah section, resulted in the line being breached for about a week during August and September 1928.

North Western Railway.—Several branch lines were breached resulting in an interruption of the train service :—

on the Bahawalnagar-Cholistan section for 36 hours on the 26th May, 1928, due to a canal overflowing its bank,

on the Laki-Marwat-Tank section, from the 22nd to 25th July 1928,

on the Mailsi-Pakpattan section, from the 1st to the 3rd September 1928, due to heavy rain,

on the Chiniot Branch for one day in July, and from the 1st to the 10th September 1928, due in both cases to heavy rain.

on the Amritsar-Dera Baba Nanak section from the 1st to the 14th September 1928, on account of floods,

on the Malakwal-Khushab section from the 1st to the 4th September 1928, and on the Malakwal-Bhera section from the 2nd to 5th September, 1928, in both cases due to the river Jhelum overflowing its bank.

Rohilkund and Kumaon Railway.—The line between Lalkua and Gularbhoj was breached on 1st July 1928, and the train service was suspended till the 5th July.

South Indian Railway.—On the 1st August 1928, several slips took place between Vaniambalam and Nilambur Road, on the Shoranur-Nilambur Railway, rendering the line unsafe for passenger traffic. Through running was restored on the 4th August.

On the night of the 29th November 1928, exceptionally heavy rains were experienced on the Nilgiri Railway, 7·11 inches being recorded at Hill-grove station within a period of 6 hours. Serious damage was caused to the railway. In addition to slips at many places, a bridge, (2 spans of 60 feet), at mile 7/19 was badly damaged, one of the girders being carried down the side of the hill for more than a mile. The other girders were seriously damaged and dropped into the stream. Another bridge at mile 8/9-10, consisting of 5 spans of 20 feet, was also badly damaged. The first three spans and two piers entirely disappeared. The line was closed for public traffic in consequence of these breaches up to the 6th March 1929.

93. Accidents.—(*a*) The following table shows the number of railway servants and other persons killed and injured in accidents on Indian Railways, excluding casualties in railway workshops :—

Cause.	Killed.		Injured.	
	1927-28.	1928-29.	1927-28.	1928-29.
A.—Passengers.				
(1) In accidents to trains, rolling-stock, permanent-way, etc.	45	24	104	207
(2) In accidents caused by movements of trains and railway vehicles exclusive of train accidents.	339	390	1,046	1,131
(3) In accidents on railway premises in which the movement of trains, vehicles, etc., were not concerned.	3	4	29	30
Total .	387	418	1,179	1,368

Cause.	Killed.		Injured.	
	1927-28.	1928-29.	1927-28.	1928-29.
B.—Railway Servants.				
(1) In accidents to trains, rolling-stock, permanent-way, etc.	23	21	166	192
(2) In accidents caused by movements of trains and railway vehicles exclusive of train accidents.	323	341	1,323	1,492
(3) In accidents on railway premises in which the movement of trains, vehicles, etc., were not concerned.	54	49	2,713	3,180
Total .	400	411	4,202	4,864
C.—Other persons.				
(1) In accidents to trains, rolling-stock, permanent-way, etc.	39	55	84	94
(2) In accidents caused by movements of trains and railway vehicles exclusive of train accidents.	2,203	2,448	732	775
(3) In accidents on railway premises in which the movement of trains, vehicles, etc., were not concerned.	41	26	68	86
Total .	2,283	2,529	884	955
GRAND TOTAL .	3,070	3,358	6,265	7,187

(*b*) Out of the total of 3,358 persons killed, 2,002 were trespassers; 339 committed suicide and 79 were killed on railway premises otherwise than during the movement of trains, vehicles, etc. The increase in the number killed, as compared with the previous year, is principally under the heads " trespassers " (171) and " suicide " (29).

(*c*) The number of passengers killed and injured on all railways during the last 5 years compares as follows :—

Year.	Passengers.	
	Killed.	Injured.
1924-25	418	1,312
1925-26	377	1,323
1926-27	347	1,264
1927-28	387	1,179
1928-29	418	1,368

(*d*) On Class I Railways the number of railway servants killed in accidents which occurred during the movement of trains and railway vehicles, exclusive of train accidents increased by 16 and the number injured by 192. The main causes of the accidents and the casualties resulting therefrom are summarised below:—

Cause.	Numbers killed.		Numbers injured.	
	1927-28.	1928-29.	1927-28.	1928-29.
1. Misadventure or accidental . . .	226	185	935	1,118
2. Want of caution or misconduct on the part of the injured person.	84	133	267	288
3. Want of caution or breach of rules, etc., on the part of servants other than the persons injured.	2	12	40	41
4. Defective apparatus or system of working, dangerous places, dangerous conditions of work or want of rules or systems of working.	2	...	14	1
Total .	314	330	1,256	1,448

(*e*) The following statement analyses the accidents which occurred during the last two years, grouped under the principal causes. A statement showing the accidents in greater detail for each railway will be found in Appendix D of Volume II of this report:—

	1927-28.	1928-29.
1. Running over cattle. . . .	9,684	9,707
2. Derailment not involving passenger trains	4,343	4,637
3. Accidents due to failure of couplings and draw gear	3,368	3,150
4. Accidents due to failure of engines owing to faulty material, workmanship and operation arising from the working of the running staff.	2,067	2,605
5. Accidents due to failure of engines owing to faulty material and workmanship in the Mechanical Department.	713	804
6. Derailment of passenger trains. .	383	412
7. Broken rails.	353	308
8. Collision involving goods trains or goods vehicles. . . .	254	265
9. Fires in trains or at stations or bridges.	245	237
10. Running over obstructions on the line	258	219
11. Trains running over obstructions or vehicles at level crossings . .	136	120
12. Flooding of permanent-way . .	164	126

	1927-28.	1928-29.
13. Passenger trains running in the wrong direction through points but not derailed. . . .	115	**112**
14. Collisions between light engines. .	89	**64**
15. Collisions involving passenger trains.	67	**63**
16. Accidents due to failure of axles. .	60	**89**
17. Land slips.	38	**52**
18. Accidents due to failure of tyres or wheels.	30	**33**
19. Accidents due to failure of brake apparatus.	20	**26**
20. Failure of bridges or tunnels. .	15	**9**
21. Miscellaneous.	445	**430**
Total .	22,847	**23,468**

(*f*) The total number of accidents shows an increase of 621 when compared with the previous year: against this the increase in total train miles was 5·6 millions.

(*i*) " Running over cattle " still accounts for the largest number of accidents, *i.e.*, 41 per cent. of the whole. Next in order, are " derailments not involving passenger trains " (20 per cent.) " accidents due to failure of couplings and draw gear " (13 per cent.), " accidents due to failure of engines owing to faulty working of the running staff, etc." (11 per cent.), and " accidents due to failure of engines owing to faulty material, etc., in the mechanical department " (3 per cent).

(*ii*) " Collisions involving passenger trains " shows a slight decrease, although passenger train miles increased by over $3\frac{3}{4}$ million miles. Similarly, cases of " trains running over obstructions or vehicles at level crossings " showed a decrease, inspite of an increase in the number of vehicles on the road. The other heads which showed a decrease in the number of accidents were " fires in train or at stations or bridges ", " broken rails ", " flooding of permanent-way ", " collisions between light engines " and " running over obstructions on the line ".

(*iii*) " Derailments of passenger trains ", " collisions involving goods trains and vehicles " and " accidents due to failure of axles, tyres or wheels and landslips," however, showed a slight increase. Accidents in railway workshops accounted for the death of 30 and injuries to 7,301 railway servants, or an increase of 6 in the former and 1,187 in the latter head as compared with the previous year.

94. A short description is given below of the more serious accidents which occurred during the year.

(i) *Derailment of 38 Down Passenger on the Eastern Bengal Railway.*—On the 19th April 1928 at about 13·56 hours the last three bogie passenger coaches on No. 38 Down Passenger train derailed as the train was approaching Dum Dum Junction, the central of the three derailed vehicles capsizing. There were only four passengers occupying these carriages, all of whom were seriously injured. The damage to permanent-way amounted to Rs. 17,500, and to rolling stock to about Rs. 15,000. The accident was due to the fracture of one of the wheels of the leading derailed vehicle.

(ii) *Parting of goods train and subsequent collision of the rear portion of the parted train with a mail train on the Burma Railways.*—On the 21st May 1928 at about 22·15 hours, No. 345 Up Fast Goods train parted between the 39th and 40th vehicles near the top of an up grade about a mile from Thawatti station on the main line between Rangoon and Mandalay. The rear portion of the train, consisting of 35 wagons, ran back into Thawatti

station and collided with 1 Up Mail which had just come to a stop on the 2nd line.

The engine and tender of 1 Up Mail were derailed, forced back over 100 yards and partly capsized. The luggage van next to the tender was thrown into the air and fell on top of the stock of No. 340 Down Goods which was standing on the platform line and the leading 3rd class bogie carriage was derailed. Three passengers in 1 Up Mail were slightly injured and two seriously injured. The total damage to rolling stock and track was about Rs. 13,500.

(iii) *Collision in Kotri Yard on the North Western Railway.*—On the 4th June 1928 at about 5·15 hours, 45 Up Passenger which had left Bholari station at 5·7 hours for Kotri collided with an up banking engine which had left Bholari at 4·25 hours in advance of 45 Up, but had been detained outside signals at Kotri. When signals were lowered for 45 Up Passenger to enter Kotri yard, the up banking engine came in but was overtaken by 45 Up Passenger. The shock of the collision parted the engine of the passenger train from the saloon carriage next to it and resulted in fifteen passengers in other carriages on the train being slightly injured. The accident was due to the Assistant Station Master at Kotri having wrongly given " permission to approach " for 45 Up Passenger train although the up banking engine had not arrived within the protection of his signals.

(iv) *Collision at Talit station on the East Indian Railway.*—On the 18th June 1928 at about 0-11 hours, No. 3256 Down Goods train ran into the rear of No. 1652 Down Goods while entering Talit station. The engine of No. 3256 capsized. The driver and one fireman of the engine of No. 3256 and the guard of No. 1652 Down were killed. The accident was due to the failure on the part of the station staff to return the signals to danger after No. 1652 Down Goods had entered station limits. The damage to rolling stock amounted to Rs. 5,693.

(v) *Derailment of No. 17 Up Passenger on the East Indian Railway.*—On the 8th July 1928 at about 22·42 hours the engine and the first five vehicles of 17 Up Passenger were derailed between Belur and Dankuni stations on the Howrah-Burdwan Chord line of the East Indian Railway. Eighteen passengers and the European driver of the train were killed, 8 passengers and one fireman were seriously injured, (of these two passengers subsequently died in hospital) and 24 passengers and one fireman were slightly injured. The cost of the damage to rolling stock amounted to Rs. 1,01,333 and to permanent-way Rs. 1,654. The accident was due to the malicious removal of rails by some persons unknown.

(vi) *Derailment of a mail train on the South Indian Railway.*—On the 21st July 1928 at about 23 hours, No. 2 Boat-mail, which had left Dhanushkodi on the morning of the previous day was derailed soon after passing Singaperumalkoil station. The engine and three other coaches left the track and travelled thus for about fifty yards. The first coach, a postal van, was not damaged but the two following third class carriages, were wrecked. Eight passengers and three police guards were injured. The cost of damage to rolling stock and permanent-way amounted to Rs. 42,650. The derailment was due to deliberate tampering with the track.

(vii) *Derailment of a passenger train on the South Indian Railway.*—On the 23rd July 1928, on the South Indian Railway, No. 26 Passenger *ex*-Madura to Trichinopoly was derailed two miles north of Kodaikanal Road station due to the malicious removal of a rail from the track. The two engines on the train and five leading coaches left the rails. The first four coaches (3rd class) were wrecked, one being thrown right across the track and the two following telescoped. One passenger was killed and, of the 31 badly injured, one subsequently died in hospital. The damage to rolling stock and permanent-way amounted to Rs. 93,050. A permanent way gang cooly, a shunter and a goods-shed porter were prosecuted in the case and each of the first two sentenced to four years' rigorous imprisonment and the third to two years' rigorous imprisonment.

(viii) *Light engine running into a motor bus on the South Indian Railway.*—On the 25th July 1928, at about 14 hours, a light engine, running tender foremost from Trichinopoly Junction to Trichinopoly Fort, ran into a motor bus at the level crossing at mile 252/10. All the occupants of the bus, 8 in number, were either killed on the spot or died later in hospital from injuries and burns received. The evidence at the enquiry held by the Senior Government Inspector of Railways pointed to the fact that the driver of the bus was moving recklessly and endeavoured to cross in front of the engine, which appears to have been travelling at about 12 miles an hour.

(ix) *Collision at Sakaldiha station on the East Indian Railway.*—On the 4th August 1928 at about 2·55 hours, No. 300 Down Goods entering Sakaldiha station on the East Indian Railway collided with 168 Down Goods, which had arrived at the station at 1·15 hours and had been placed in a siding to allow two passenger trains to pass through the station. After the passage of these two passenger trains, 168 Down was brought out of the siding on to one of the main lines on which 300 Down was then being received. An officer of the Engineering Department of the East Indian Railway, Mr. R. Stock, who was travelling in a saloon carriage attached in rear of 168 Down Goods, was killed and his servant seriously injured. The cost of damage to rolling stock amounted to Rs. 18,789 and to permanent-way Rs. 400. The accident was due to a misunderstanding between the Station Master on duty and the Guard of 168 Down Goods in regard to the arrangements for the shunting of 168 Down, for which the Station Master was held primarily responsible.

(x) *A bomb explosion in an express train on the Great Indian Peninsula Railway.*—On the 7th October 1928 at about 14-10 hours, while No. 198 Express, composed of eight bogie carriages, was running between Hisvahal and Manmad, a serious explosion took place in the seventh vehicle from the engine, seriously damaging the carriage in which the explosion occurred and the carriage in front of it, and killing three passengers and injuring nine. One of the injured subsequently succumbed to his injuries. The cost of damage to rolling stock was about Rs. 5,400. At the trial of the two men, who were arrested in connection with this case, it was established that dynamite as well as bombs were responsible for the explosion, which was an accident. One of the two men was convicted of offences under the Arms Act, the Explosives Act and the Indian Railways Act, and the other of abetment of these offences, each of them being sentenced to seven years' rigorous imprisonment.

(xi) *Accident to a relief train on the Madras and Southern Mahratta Railway.*—On the 21st October 1928, an accident Relief Train, while proceeding to a breach on the line between Yellamanchilli and Bayyavaram on the Madras and Southern Mahratta Railway, was precipitated into the river below bridge No. 510 at mile 415/1, between Annavaram and Hamsavaram. The accident was due to the failure of the training bund and consequent erosion and subsidence of the railway embankment while the engine was passing over the Bridge.

The District Traffic Superintendent and Assistant Traffic Superintendent, Bezwada, who were travelling on the engine and a fireman of the engine were drowned. The driver and the second fireman of the engine, as also the District Engineer, Bezwada, who was also travelling on the engine, were rescued.

(xii) *Collision in Bhatni Station yard on the Bengal and North-Western Railway.*—On the 25th November 1928 at 0·5 hours No. 103 Up Passenger, whilst entering Bhatni Station yard, collided with an engine standing attached to a rake of 49 goods wagons. Two passengers were killed, one seriously injured and three passengers and the drivers of the two engines slightly injured. The cost of damage to rolling stock amounted to Rs. 25,000. The accident was due to the train being received on the wrong line, the staff having failed to set and lock the points for the line on which the passenger train should have been received.

Diagramatic Statistics at the Railway Publicity Exhibition held at Delhi (February 1929).

(xiii) *Accident to a ballast train on the East Indian Railway.*—On the 6th March 1929 at about 16-15 hours, a ballast train running on the Gomoh-Barkakana Section of the East Indian Railway ran into a catch siding above Danea station. One fireman, two ballast train coolies, one child and one keyman were killed; the Assistant Permanent Way Inspector and six coolies were seriously injured and 35 coolies slightly injured. The accident was due to the train having an excess load and to the driver losing control of the train.

(xiv) *Fire in an express train on the Burma Railways.*—On the 10th March 1929 at about 13-30 hours, whilst 1 Up Rangoon-Mandalay Express was travelling between the 5th and 6th miles from Rangoon, a fire occurred in a 3rd class bogie carriage, resulting in the complete destruction of the body-work of the coach and injury to seventy passengers, five of which were serious. The injuries were the result of passengers jumping out of the burning carriage before the train was brought to a halt. The cost of damage to rolling stock was about Rs. 6,250. The suddenness with which the fire originated, the rapidity with which it spread and its location, indicate that the fire was caused by the accidental ignition of some highly inflammable liquid, presumably carried by one of the passengers.

95. Safety First.—Copies of the " Safety First " film produced by the Central Publicity Bureau have continued to be exhibited by the travelling cinema cars on the Great Indian Peninsula, East Indian, Eastern Bengal, North Western and Bombay, Baroda and Central India Railways. A brief account of " Safety First " measures adopted on some of the railways appeared in paragraph 90 of last year's Report. To what was said then may now be added the following :—

Eastern Bengal Railway.—Several " Safety First " posters were brought out during the year.

Great Indian Peninsula Railway.—Instruction in " Safety First " was continued through the medium of booklets printed in four languages, English, Urdu, Hindi and Mahratti, and distributed among the railway staff. Special notices were exhibited at suburban stations warning the public of the danger of riding on foot-boards and crowding near the doorways.

Jodhpur Railway.—Special " Safety First " articles were frequently published in the Jodhpur Railway Gazette.

96. Publicity.—The Central Publicity Bureau of the Railway Board which was inaugurated on 1st April 1927, was placed on a permanent footing with effect from 1st January 1929. At the close of the year under review, the following railways were parties to the Bureau :—

Railways.	Date of joining.
Great Indian Peninsula, East Indian, Eastern Bengal and North Western Railways . .	1st March 1927.
Bombay, Baroda and Central India Railway .	1st April 1928.
Bengal Nagpur Railway	1st October 1928.
Burma Railways	1st January 1929.

The premises occupied by the London Office of the Bureau, in the P. & O. Company's Building at 14, Cockspur Street, having been found inadequate for a business that was rapidly expanding, it was decided to obtain other premises. Suitable accommodation has been secured at No. 57, the Haymarket, but at the close of the year the Bureau was still located in Cockspur Street.

The question of opening a Bureau in New York was carefully considered in view of the enquiries about touring in India, that were being received by the London Bureau from American tourists, and of the fact that the majority of the tourist traffic in India comes from the United States. An officer was specially deputed to visit the States for this purpose, and since the close of the year a Bureau has been opened in New York.

Considerable progress was also made in the production of films, 48 new films, classified as follows, being added to the Central Publicity Bureau's Film library:—

	No.	Total length (feet.)
Agricultural, irrigation, improvement of live-stock and rural welfare	8	13,872
Industrial	4	4,590
Health	2	4,693
Places of interest for tourists	14	18,001
Places of interest for Indian pilgrims . .	9	6,006
Technical matters pertaining to railways . .	1	1,000
Topical	10	4,455
Total .	48	52,617

While the majority of the new films produced are of interest primarily to travellers, a considerable number already produced relate to rural economics. The production of the latter was in many cases undertaken at the request and with the collaboration of the provincial Government within whose province the location or setting of the film was laid.

With an increase in the number of railways joining the Central Publicity Bureau, the demand for copies of films has increased, and it has been found more satisfactory to start film libraries for each Railway. During the year under review, 147 copies of various films (143,500 ft. in length) were supplied to railways, Government Departments, and others: a sum of Rs. 19,262 being realised on this account. Free copies of certain films were sent overseas for publicity purposes, and reciprocal arrangements entered into with Railways and Shipping Companies.

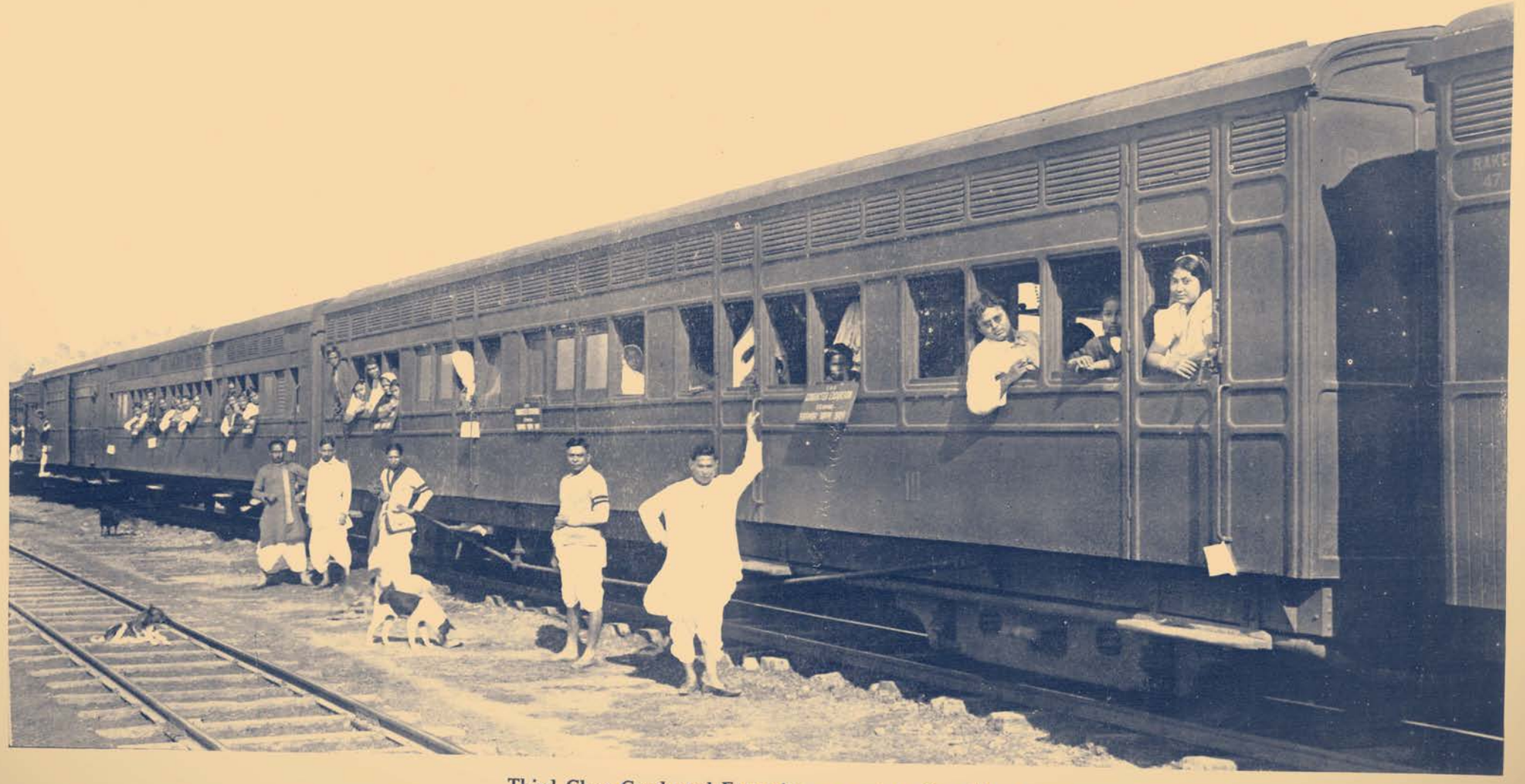
Considerable progress has also been made in designing new posters advertising Indian Railways. These have been sent all over the world for display on a reciprocal basis.

A large number of new pamphlets dealing with matters of special interest to tourists, written by writers who have specialised in the subjects treated, have been issued. The demand for these pamphlets is very large, as is evidenced by the fact that since they were first issued in August 1927 approximately 274,830 have been distributed. In the latest editions of these pamphlets additional information regarding hotels, conveyances and other facilities for passengers generally have been incorporated.

Reciprocal publicity arrangements with overseas railways have grown during 1928-29 and the Bureau is now in touch with several railway administrations in Europe, Africa, America, Australia and Japan, with whom posters and films for display, and literature for distribution, are exchanged. Similar arrangements have been made with public bodies not connected with railways.

The Indian State Railways Magazine.—The first number of this magazine was issued in October 1927; it has now a monthly circulation of 6,000 copies and has developed into a high class magazine of special interest for tourists, besides also appealing, in the wide range of the subjects dealt with, to a large circle of the educated classes. The 1928 'Xmas Number was a special issue of 111 pages with 5 coloured plates. 10,000 copies of this number were printed and widely distributed through travel agencies.

The Eastern Bengal, East Indian, Great Indian Peninsula and North Western Railways have also continued the issue of their Supplements to the Indian State Railways Magazine, which are distributed gratis to those of their respective employees who subscribe to *The Indian State Railways Magazine*. These Supplements are of local interest, dealing with current events on the Railway concerned.



Third Class Conducted Excursions *en route* to Kamakhaya.

The following dioramas, which have been prepared, are exhibited at the London office of the Bureau :—

The Taj Mahal by moonlight.
The river front at Benares.
Udaipur.
The Dal Lake, Kashmir.

To assist tourists visiting India, Tourists Advisers were appointed as an experimental measure and posted to the more important of the stations that generally find a place in the itinerary of a tourist. Judging by the many appreciative letters testifying to the assistance given and the courtesy of the Tourist Advisers, the experiment appears to have been thoroughly justified, and it is proposed, therefore, to make similar appointments for the 1929-30 season.

An exhibition of publicity material was arranged in Simla in October 1928, when the Agents and other principal officers of all railways in India were there for the annual meeting of the Indian Railway Conference Association. The exhibition was intended to demonstrate what had already been done by the Central Publicity Bureau and six of the principal railways in regard to publicity. As considerable public interest was manifested in this matter, a Publicity Exhibition on a very much larger scale was organised in Delhi in February 1929. The Legislative Assembly and the Council of State were then in session and their members, as also the general public, had an opportunity of seeing what advance had been made in publicity work by railway administrations in India.

The Central Publicity Bureau, while devoting much of its time and attention to the problem of making India better known as a land which would well repay visits from tourists from foreign countries, also plays a very large part in co-ordinating the activities of the Publicity Officers of individual railways. In the following paragraphs brief particulars are given of what railways have been able to do in regard to publicity work during the year under review.

Bengal and North-Western Railway.—While no extensive campaign of advertising has been undertaken, action has been taken to make the public time table more attractive. This publication now contains historical and other information relating to the local places of importance, which are of value to pilgrims visiting the holy places of northern India.

Burma Railways.—Publicity work was taken up from the 1st January 1929, when a Publicity Officer was appointed. It is felt that at present the most fruitful field for this work lies among the Burmese travelling public as the absence of hotels or other suitable accommodation for foreign tourists in Burma is a handicap to any considerable extensions of foreign tourist travel by rail. A Railway Hotel is to be built at Mandalay when funds are available and will undoubtedly assist in the development of foreign tourist traffic.

Bombay, Baroda and Central India Railway.—For the Christmas holiday traffic, in addition to the usual newspaper advertising, 12,000 circulars in the form of Christmas cards were despatched to residents in Bombay giving particulars of the concessions admissible. 20,000 similar cards were distributed in the mofussil. Sandwichmen also paraded the principal streets of Bombay with posters advertising the concessions.

The " Tourist Guide " giving details relating to places of interest on the railway, was revised during the year and arrangements made for copies to be distributed in Europe and America. 5,000 copies of the Bombay, Baroda and Central India Railway Annual were also distributed in Europe, America, Australia and Africa. An artistic calendar was presented to a large number of business and commercial firms in Bombay at the beginning of New Year (1929).

Special attention was also paid to publicity methods for increasing lower class traffic. Pamphlets were produced in vernacular languages de-

scriptive of Dakor and Muttra, two important pilgrim resorts on this railway.

Eastern Bengal Railway.—Sandwichmen and drummers were effectively used in Calcutta to parade posters advertising the provision of railway facilities for special events such as the Barrackpore Races, the running of Bazar Specials and Demonstration Trains. Illustrated vernacular pamphlets were published in connection with the Pooja holidays.

A metre gauge cinema car was built and brought into use in November 1928 and over fifty exhibitions given at different stations on the metre gauge section up to the end of March 1929.

Great Indian Peninsula Railway.—Booklets.—Eight booklets, advertising places of interest and special train services, were printed during the year; the most important being one dealing with the Imperial Indian Mail and the Punjab Limited. Copies of this booklet were sent for distribution in Britain. The Punjab Limited service was also specially advertised by the broadcasting of Punjab Limited folders and attractive sheet time tables. Vernacular booklets advertising important fairs and other gatherings were issued, chief among them being those on Pandharpur and Nasik in Marathi, and on Muttra in Hindi and Marathi.

A number of letter press posters were also prepared in both English and vernacular, drawing attention to reduced fares, special train arrangements for fairs and other festivals, excursion tours, concession travel during public holiday periods, etc.

Cinema Car.

There is a constant demand for cinema shows from all over the line and occasionally agricultural officers and health officers of the Provincial Governments call upon the Publicity Officer for shows at fairs and exhibitions. The average attendance per show is estimated at 2,500 persons. A new generating plant was purchased and is giving satisfactory service.

His Exalted Highness the Nizam's Guaranteed State Railways.—Descriptive sketches of places of interest within easy reach of stations were published in the coaching guide and places of special interest were shown in the English and vernacular sheet time tables. Concessions for fairs for other special occasions were advertised in the press and also by the exhibition of posters, distribution of leaflets and by special slides in cinema theatres. A cinema car made periodical tours of the line and educational films dealing with agricultural and industrial subjects were exhibited at selected stations. These films were explained in the local vernaculars by lecturers arranged for by His Exalted Highness the Nizam's Government.

North Western Railway.—The Cinema Car exhibited films at 144 stations during the year: the total number of people present at these shows being approximately 684,000.

The Solar Eclipse Fair at Kurukshetra in November 1928 was widely advertised by the issue of an illustrated pamphlet in Hindi, Urdu, Bengali and Gujrati, distributed widely throughout Northern and Central India.

In connection with the opening of the Kangra Valley Railway, an illustrated pamphlet in English on the Kangra Valley, which was specially issued at the time, was widely distributed in India, Ceylon and Burma. An Urdu edition has also been distributed in the Punjab, the United Provinces and the North-West Frontier Province.

South Indian Railway.—Among several posters published special mention may be made of those advertising the " Blue Mountain Express ", the " Nilgiris " and the " Malabar Coast ". Pamphlets were also published descriptive of the Nilgiris and " Sport in South India ".

A Madras Suburban folder giving the timings of train was issued monthly free to all season ticket holders. This folder was also used to advertise festivals, etc.

NORTH WESTERN RAILWAY.

Enquiry Office on the Demonstration Train.

97. Demonstration Trains.—In paragraph 92 of last year's report reference was made to the running of demonstration trains over the Eastern Bengal and North Western Railways. Vehicles on these trains consist of third class bogie carriages denuded of their ordinary internal fittings and suitably converted and fitted for display and educational purposes in accordance with the requirements of the particular department of the Local Government in whose services they are to be utilised.

These departments pay special reduced rates for the running of these trains.

On the Eastern Bengal Railway a demonstration train was run on the metre gauge section during January and February 1929.

A demonstration train was also run on the North Western Railway, with six vestibuled demonstration cars, which were allotted to the following departments of the Punjab Government :—

Agriculture	2 cars.
Industries	2 cars.
Public Health	1 car.
Veterinary	1 car.

The train toured throughout the Punjab, over the North Western Railway from 10th October 1928 to the 18th April 1929, visiting 83 places and covering an aggregate distance of 3,650 miles.

98. Excursion Trains.—The practice of organising " conducted excursions " is being steadily developed as opportunities offer. A feature common to all these excursions is the completeness with which the excursionist—the third class passenger, no less than the upper class—is taken charge of by the Railways organising these excursions, and the very careful arrangements that are made to cater for all classes and to provide guides, conveyances, etc. That these arrangements are much appreciated by those who have travelled by these excursion trains is demonstrated by the many enquiries railways continue to receive about future excursions, in addition to letters of appreciation from those who have had personal experience of these tours. The following are particulars of the excursion tours organised during the year under review.

East Indian Railway.—A train carrying 48 first class passengers left Howrah on the 19th January 1929, and, after visiting Benares, Lucknow, Cawnpore, Delhi, Fatehpur Sikhri and Agra, returned to Howrah on the 27th idem. The total inclusive charge for each passenger was Rs. 369.

Eastern Bengal Railway.—Two excursion trains carrying upper class passengers were run from Sealdah to Siliguri, carrying passengers for Kurseong and Darjeeling. On the first train, which was run in May 1928, the entire accommodation (for 143 passengers) was fully booked a week before the train left Sealdah. On the second occasion, however, which was in September 1928, only 53 passengers were booked.

Two 3rd class excursion trains each limited to 100 passengers, were run from Calcutta to Kamakhya for an inclusive charge of Rs. 12 per head. This amount covered five meals and two steamer trips. An excursion train, limited to 70 passengers, arranged from Calcutta to Darjeeling proved very popular.

Great Indian Peninsula Railway.—A third class excursion train carrying 123 passengers was run from Poona to Bombay and back on the 22nd April 1928 at an inclusive charge of Rs. 3-14-0 per head. This amount included the cost of meals, guides and road journeys in Bombay.

A second class excursion train carrying 192 college students and professors (including two lady superintendents and fifty lady students) was run from Bombay in October 1928 at an inclusive charge of Rs. 70 per head, which covered catering and sight-seeing expenses also. The places visited were Sanchi, Agra, Fatehpur Sikhri, Delhi and Bhopal.

A first class de luxe excursion train, conducted by Messrs. Thomas Cook & Son, left Bombay on 21st December 1928, visiting Benares, Lucknow, Delhi,

Agra, Gwalior, Sanchi and Bhopal, and returned to Bombay on the 30th idem. A feature of the train was the provision of a parlour car complete with a buffet, a book-stall and a hair-dresser's shop, and a cinema show every evening.

Two excursion trains carrying in all 262 second class passengers were also run during the X'mas holidays of 1928, visiting Bhopal, Sanchi, Gwalior, Fatehpur Sikhri and Delhi.

Bombay, Baroda and Central India Railway.—Excursion specials were run during the year as follows :—

(*a*) one carrying 74 second class and 284 third class passengers to Siddhpur, Ajmer, Muttra, Cawnpore, Ajodhya and Benares.

(*b*) one carrying 127 second class passengers and 39 servants in third class compartments on a tour covering some 4,600 miles and extending over a period of forty days. This train was specially organised for the mill owners of Ahmedabad, and the catering was in the strictly orthodox Hindu style, to facilitate which a special bogie vehicle was fitted up as a dining car.

(*c*) one carrying second and third class passengers from Bombay to Muttra, Agra, Delhi, etc.

99. Bazaar Specials.—These specials are an innovation, arranged for the first time by the Eastern Bengal Railway in September 1927, when a train of 7 third class carriages specially adapted for use as travelling shops, a catering car, an electric charging van and a cinema car was run. Space on the travelling shops was hired out to firms, who did a profitable business at the stations at which the train halted during the course of its tour. The success of the arrangements then made prompted the administration to arrange for similar specials to run in September 1928 and again in November 1928. No difficulty was experienced in letting out to firms all the accommodation available.

The Assam Bengal Railway ran a bazaar special for the first time in December 1928 : the composition being :—

7 56 ft. bogie exhibition carriages.
1 56 ft. catering car.
2 Composites for exhibition staff.
1 Brakevan for stores, etc.
1 Cinema car.
1 Water car.
1 Dynamo car.
1 Carriage for officer-in-change of train.

Nine stations were visited and 56,225 people passed through the train.

100. Anti-malarial work.—Reference was made in paragraph 94 of the Report for 1927-28 to the question of anti-malarial work being referred for consideration to the Standing Committee of Railway Medical Officers. The Committee's report has not yet been received, but railways have continued their measures against malaria, and in the following paragraphs the special steps taken by them within the period under review are briefly detailed.

Bengal Nagpur Railway.—A malariologist, who was appointed on the 1st February 1928, has been engaged in adopting measures to combat malaria, particularly in those areas where its incidence is greatest. The efficiency of the control over malaria exercised by the railway is reflected in the results at certain stations. For example, at Waltair the percentage of sickness on account of malaria among those living in the railway colony was appreciably less than among those living outside. Similarly, at Dangoaposi the incidence of malaria is much less among employees who do not leave the station than among the train staff who are required by the exigencies of the service to work

Members of the Italian Naval League (on tour) at Tanjore Temple.

in uncontrolled malarious sections higher up the Gua Branch, where they become infected. Very useful work has been done at Rayagada, at the Nagavali Bridge works and on the section in Kalahandi State, resulting in a substantial reduction in the incidence of sickness among the staff. It has been found that wherever malaria is properly controlled, there is a drop in the incidence of all diseases. A bad outbreak of malaria at Solawa-Bridge works occurred during the year, due to only a week's relaxation of an Inspector's vigilance.

Bombay, Baroda and Central India Railway.—An anti-malarial unit specially engaged for the purpose has continued its operation, as in the previous year. The following permanent and temporary measures were adopted :—

Permanent measures :—

Major works—

1. Providing standard type of water cisterns in place of old uncovered cisterns.
2. Large drainage schemes as in Bellasis Road new yards, at Dadar joint yard and Dadar station and at Bandra Marshalling yard quarters.
3. Filling up the low lying land to the east of the railway line between Matunga and Mahim, and to the east of the Bandra Marshalling yard.
4. Filling up open wells at Santa Cruz.

Minor works—

1. Suppression of small patches of marshy ground.
2. Regulation of the edges and cleaning of drains.
3. Filling up of small hollows.
4. Making of small drains.
5. Stocking open wells and tanks with larvæ eating fish, etc.

Temporary measures :—

(1) Regular weekly inspection of all railway land from Colaba to Santa Cruz.

(2) Covering with a layer of oil every collection of water in which is found breeding but which cannot be drained.

(3) Removal of all broken tins, pots, bottles, etc., which can contain water and harbour larvæ.

(4) Instructing inhabitants to recognise mosquito larvæ and in the methods of destroying them.

(5) Draining off quickly all surface collections of water which can last sufficiently long to become breeding grounds for mosquitos during the rains.

Larvicides used :—

Crude petroleum.—Three tons were used in spraying over breeding places.

Paris Green.—This is a copper aceto-arsenite compound. It was mixed intimately with saw dust or French-chalk in the proportion of 1 in 100 and spread on water collections where the use of oil was prohibited, as in standing water in construction works. One cwt. was used.

Saponified cresol.—10 gallons were used in treating collections of water in tubs, barrels, masonry tanks, fire buckets, etc., where the use of oil was disallowed.

Cultivation of fish.—Small fish as " Anabas Scandans " and " Polyacanthus Cupanus " were collected from fresh water ponds at Borivli, and stocked in the open wells at Santa Cruz and Pali Hill bungalow.

As the progress of an anti-mosquito campaign is known by the percentage of children with an enlarged spleen, a splenic index was made and the percentages in the different localities were found to be as under :—

Locality.	Total No. of children examined.	Percentage with palpable spleen.
Bellasis Road chawls	48	11
Agripada chawls	33	15
Carnac Bunder	36	12
Carrol Road	74	42
Dadar Joint Yard	19	10

The malaria unit was sent out also to Bulsar, Dohad and Surat, to search for breeding places in the railway area.

Eastern Bengal Railway.—Malaria took its toll, and also visited districts not usually affected with the disease, notably Katihar and Dacca. A reorganisation of the anti-malarial branch of the Medical Department is now proceeding. A special pamphlet on malaria has been prepared and arrangements made for broadcasting useful information through pictorial posters, cinema films and by means of lantern slide lectures.

East Indian Railway.—Anti-malarial work has continued to be carried on at stations where special steps were considered necessary, and the malarial figures for the year consequently show a marked decrease.

Great Indian Peninsula Railway.—The organisation of malarial services has been developed, and there has been a general reduction in the reported incidence of this disease. Greater care has been taken in diagnosis and the number of cases diagnosed as malaria on inconclusive data has been reduced.

Considerable advance has also been made in laboratory work. Information is now being obtained in regard to the prevailing parasite in each district. Out of 7,400 blood examinations made for malaria parasite, positive results were obtained in 24 per cent. of the slides examined.

Madras and Southern Mahratta Railway.—A medical subordinate was sent on deputation to receive a training in malaria control at the Malarial Bureau at Karnal. His services have since proved to be of value in the adoption of anti-malarial measures and it is intended to extend the area of his investigations.

North Western Railway.—Anti-malarial measures were adopted over the greater part of the line. Particular attention was paid to the removal or treatment of breeding places in the neighbourhood of staff quarters in the railway colony at Lahore and the mosquito nuisance there was noticeably less than before.

101. Traffic Developments.—*Molasses.*—The Pure Cane Molasses Company, Ltd., commenced operations in Assam for the importation of molasses from Java through the port of Chittagong. A plot of land was leased to them by the Port Commissioners and a commencement made on the erection of a bulk tank installation. To carry the traffic the Assam Bengal Railway arranged as a temporary measure to erect 24 tanks on four-wheeled underframes. These tanks were in course of erection at the close of the year

Sillimanite.—The Khasi Sillimanite Company, formed for the purpose of extracting sillimanite from the Khasi Hills, along the proposed extension of the Assam Bengal Railway from Gouripore-Mymensingh to Pandu, has been negotiating with the railway administration for a branch line from Singra, a station on the proposed extension, to Ara Market at the foot of the hills, a distance of 11 miles. If the expectations of the Khasi Sillimanite Company are realized it is estimated that 50,000 tons per annum will be exported *viâ* the port of Chittagong to Europe and America.

INTERIOR VIEW OF B. B. & C. I. RAILWAY'S DINING CAR.

1. Interior view of dining room looking towards pantry.
2. View of corner in pantry.
3. View of a portion of the kitchen.
4. Interior view looking towards entrance end.

APPENDIX A.

List showing Railway Administrations in India alphabetically arranged under three classes according to their gross earnings with the working and owning agencies thereof.

[NOTE.—Railways under construction or sanctioned for construction on the 31st March 1929, are shown in italics.]

RAILWAY SYSTEM.		LINES COMPRISED IN THE SYSTEM.		
Name.	Worked by	Name.	Gauge.	Owned by
1	2	3	4	5
CLASS I.—RAILWAYS.				
1. Assam-Bengal . .	Assam-Bengal Railway Company.	(*a*) Assam-Bengal .	3′ 3⅜″	State.
		(*b*) Chaparmukh-Silghat	3′ 3⅜″	Branch line Company under guarantee terms.
		(*c*) Katakhal-Lalabazar	3′ 3⅜″	Ditto.
		(*d*) Mymensingh-Bhairab Bazar.	3′ 3⅜″	Branch line Company under guarantee and rebate terms.
2. Bengal and North-Western.	Bengal and North-Western Railway Company.	(*a*) Bengal and North-Western.	3′ 3⅜″	Company subsidized by the Government of India.*
		(*b*) *Mashrak-Thawe* .	3′ 3⅜″	State.
		(*c*) Tirhoot . . .	3′ 3⅜″	Do.
3. Bengal Nagpur .	Bengal Nagpur Railway Company.	(*a*) Bengal Nagpur .	5′ 6″	State.
		(*b*) Anuppur-Bijuri .	5′ 6″	Do.
		(*c*) Mayurbhanj . .	2′ 6″	Branch Line Company under rebate terms.
		(*d*) Parlakimedi Light .	2′ 6″	Indian State.
		(*e*) Purulia-Ranchi .	2′ 6″	State.
		(*f*) Raipur-Dhamtari .	2′ 6″	Do.
		(*g*) Satpura . . .	2′ 6″	Do.
		(*h*) Tumsar-Tirodi Light	2′ 0″	Do.
4. Bombay, Baroda and Central India.	Bombay, Baroda and Central India Railway Company.	(*a*) Bombay, Baroda and Central India.	5′ 6″	State.
		(*b*) Nagda-Ujjain . .	5′ 6″	Indian State.
		(*c*) Petlad-Cambay (Anand-Tarapur Section).	5′ 6″	Ditto.
		(*d*) Petlad-Cambay (Tarapur-Cambay Section).	5′ 6″	Ditto.
		(*e*) Tapti-Valley . .	5′ 6″	Branch line Company under rebate terms.
		(*f*) Bombay, Baroda and Central India.	3′ 3⅜″	State.
		(*g*) Ahmedabad-Parantij	3′ 3⅜″	Branch line Company under rebate terms.
		(*h*) Dhrangadra . .	3′ 3⅜″	Indian State.
		(*i*) Gaekwar's Mehsana .	3′ 3⅜″	Ditto.
		(*j*) Jaipur State . .	3′ 3⅜″	Ditto.
		(*k*) Palanpur-Deesa .	3′ 3⅜″	Ditto.†
		(*l*) Bombay, Baroda and Central India.	2′ 6″	State.
		(*m*) Champaner-Shivrajpur-Pani Light.	2′ 6″	Branch line Company under rebate terms.
		(*n*) Godhra-Lunavada .	2′ 6″	Ditto.
		(*o*) Jhagadia-Thawe‡ .	2′ 6″	Indian State.
		(*p*) Nadiad-Kapadvanj .	2′ 6″	Branch line Company under rebate terms.
		(*q*) Piplod-Devgad-Baria	2′ 6″	Indian State.
		(*r*) Rajpipla State .	2′ 6″	Ditto.
5. Burma . . .	State . . .	(*a*) Burma . . .	3′ 3⅜″	State.

* Receives land only from Government.
† Owned jointly by Government and Palanpur Durbar.
‡ Closed for traffic from 25th July 1927.

Railway system.		Lines comprised in the system.		
Name.	Worked by	Name.	Gauge.	Owned by
1	2	3	4	5
CLASS I.—RAILWAYS—*contd.*				
6. Eastern-Bengal.	State	(*a*) Eastern-Bengal	5′ 6″	State.
		(*b*) Sara-Sirajganj	5′ 6″	Branch line Company under rebate terms.
		(*c*) Eastern-Bengal	3′ 3⅜″	State.
		(*d*) Cooch Behar State	3′ 3⅜″	Indian State.
		(*e*) Eastern-Bengal	2′ 6″	State.
		(*f*) Khulna-Bagerhat	2′ 6″	Branch line Company under rebate terms.
7. East Indian	State	(*a*) East Indian	5′ 6″	State.
		(*b*) Hardwar-Dehra	5′ 6″	Branch line Company under guarantee terms.
		(*c*) South Bihar	5′ 6″	Branch line Company.
		(*d*) Cawnpore-Burhwal link.*	3′ 3⅜″	State.
8. Great Indian Peninsula.	State	(*a*) Great Indian Peninsula.	5′ 6″	State.
		(*b*) Bhopal-Itarsi (Indian State Section).	5′ 6″	Indian State.
		(*c*) Bhopal-Ujjain	5′ 6″	Ditto.
		(*d*) Bina-Goona-Baran	5′ 6″	Ditto.
		(*e*) *Dharwa-Pusad*	2′ 6″	State.
		(*f*) Dhond-Baramati	2′ 6″	Branch line Company under rebate terms.
		(*g*) Ellichpur-Yeotmal	2′ 6″	Ditto.
		(*h*) Pachora-Jamner	2′ 6″	Ditto.
		(*i*) Pulgaon-Arvi	2′ 6″	Ditto.
9. Jodhpur	Indian State	(*a*) Jodhpur	3′ 3⅜″	Indian State.
		(*b*) Jodhpur-Hyderabad (British Section).	3′ 3⅜″	State.
		(*c*) Mirpur Khas-Khadro	3′ 3⅜″	Company subsidized by the Government of India.†
		(*d*) Pipar-Bilara Light	‡2′ 0″	Indian State.
10. Madras and Southern Mahratta.	Madras and Southern Mahratta Railway Company.	(*a*) Madras and Southern Mahratta.	5′ 6″	State.
		(*b*) Kolar Goldfields	5′ 6″	Indian State.
		(*c*) Tenali-Repalle	5′ 6″	District Board.
		(*d*) Madras and Southern Mahratta.	3′ 3⅜″	State.
		(*e*) Alnavar-Dandeli (Provincial).	3′ 3⅜″	Do.
		(*f*) Bangalore-Harihar	3′ 3⅜″	Indian State.
		(*g*) Bezwada-Masulipatam.	3′ 3⅜″	District Board.
		(*h*) Hindupur (Yesvantpur-Mysore Frontier).	3′ 3⅜″	Indian State.
		(*i*) Kolhapur State	3′ 3⅜″	Ditto.
		(*j*) Sangli State	3′ 3⅜″	Ditto.
		(*k*) West of India Portuguese.	3′ 3⅜″	Foreign Country.
11. Nizam's Guaranteed State.	Nizam's Guaranteed State Railways Company.	(*a*) Nizam's Guaranteed State.	5′ 6″	Company guaranteed by Indian State.
		(*b*) Bezwada Extension	5′ 6″	State.
		(*c*) Karepalli-Kothagudium.	5′ 6″	Indian State.
		(*d*) Kazipet-Balharshah	5′ 6″	Ditto.
		(*e*) *Vikrabad-Bidar*	5′ 6″	Ditto.
		(*f*) Dhone-Kurnool-British Frontier.	3′ 3⅜″	State.
		(*g*) Hingoli Branch	3′ 3⅜″	Indian State.
		(*h*) Hyderabad Godavari Valley.	3′ 3⅜″	Company guaranteed by Indian State.
		(*i*) *Parbhani-Purli*	3′ 3⅜″	Indian State.
		(*j*) Secunderabad-British Frontier.	3′ 3⅜″	Ditto.

* Under running power agreement the B. and N.-W. Railway Company run and haul their trains and traffic over this line.

† Receives land only from Government.

‡ Converted into metre gauge from 2nd August 1928.

Railway system.		Lines comprised in the system.		
Name.	Worked by	Name.	Gauge.	Owned by
1	2	3	4	5
CLASS I.—RAILWAYS—*concld.*				
12. North-Western .	State . . .	(*a*) North-Western .	5′ 6″	State.
		(*b*) Amritsar-Patti .	5′ 6″	Branch line Company under rebate terms.
		(*c*) Bahawalnagar-Cholistan.	5′ 6″	Indian State.
		(*d*) Hoshiarpur-Doab (Jullundur-Mukerian).	5′ 6″	Branch line Company under rebate terms.
		(*e*) Hoshiarpur-Doab (Phagwara-Rahon).	5′ 6″	Ditto.
		(*f*) Jammu and Kashmir (Indian State Section).	5′ 6″	Indian State.
		(*g*) Jind-Panipat (Indian State Section).	5′ 6″	Ditto.
		(*h*) Khanpur-Chachran .	5′ 6″	Ditto.
		(*i*) Ludhiana-Dhuri Jakhal.	5′ 6″	Ditto.
		(*j*) Mandra-Bhaun .	5′ 6″	Branch line Company under rebate terms.
		(*k*) Rajpura-Bhatinda .	5′ 6″	Indian State.
		(*l*) Sirhind-Rupar .	5′ 6″	Ditto.
		(*m*) Sialkot-Narowal .	5′ 6″	Branch line Company under rebate terms.
		(*n*) Southern Punjab (Main Line).	5′ 6″	Ditto.
		(*o*) Southern Punjab (Jullundur Doab).	5′ 6″	Ditto.
		(*p*) Southern Punjab (Ludhiana Extension).	5′ 6″	Ditto.
		(*q*) Southern Punjab (Sutlej valley).	5′ 6″	Ditto.
		(*r*) Jacobabad-Kashmor .	2′ 6″	Ditto.
		(*s*) Kalka-Simla . .	2′ 6″	State.
		(*t*) Kangra-Valley .	2′ 6″	Do.
		(*u*) Kohat-Thal . .	2′ 6″	Do.
		(*v*) Larkana-Jacobabad .	2′ 6″	Branch line Company under rebate terms.
		(*w*) Trans-Indus (Kalabagh-Bannu).	2′ 6″	State.
		(*x*) Zhob Valley	2′ 6″	Do.
		(*y*) Dera Ismail Khan-Tank Decauville.*	2′ 0″	Do.
13. Rohilkund and Kumaon.	Rohilkund and Kumaon Railway Company.	(*a*) Rohilkhund and Kumaon.	3′ 3⅜″	Company subsidized by the Government of India.
		(*b*) Lucknow-Bareilly .	3′ 3⅜″	State.
14. South Indian . .	South Indian Railway Company.	(*a*) South Indian . .	5′ 6″	Do.
		(*b*) South Indian . .	3′ 3⅜″	Do.
		(*c*) Nilgiri . . .	3′ 3⅜″	Do.
		(*d*) Peralam-Karaikkal .	3′ 3⅜″	Foreign Country.
		(*e*) Podanur-Pollachi .	3′ 3⅜″	District Board.
		(*f*) Pondicherry . .	3′ 3⅜″	Foreign Country.
		(*g*) Shoranur-Cochin .	3′ 3⅜″	Indian State.
		(*h*) Tanjore District Board.	3′ 3⅜″	District Board.
		(*i*) Tinnevelly-Tiruchendur.	3′ 3⅜″	Ditto.
		(*j*) Travancore (British Section).	3′ 3⅜″	State.
		(*k*) Travancore (Indian State Section).	3′ 3⅜″	Indian State.
		(*l*) Morappur-Hosur .	2′ 6″	State.
		(*m*) Tirupattur-Krishnagiri.	2′ 6″	Do.
CLASS II.—RAILWAYS.				
1. Barsi Light . .	Barsi Light Railway Company.	(*a*) Barsi Light . .	2′ 6″	Company subsidized by the Government of India.†

* Closed for traffic and dismantled from 1st October 1928.
† Receives land only from Government.

Railway system.		Lines comprised in the system.		
Name.	Worked by	Name.	Gauge.	Owned by
1	2	3	4	5
CLASS II.—RAILWAYS—*concld.*				
2. Bengal Dooars	Bengal Dooars Railway Company.	(*a*) Bengal Dooars	3′ 3⅜″	Company subsidized by District Board.
		(*b*) Bengal Dooars Extensions.	3′ 3⅜″	Line subsidized by the Government of India.*
3. Bhavnagar State	Indian State	(*a*) Bhavnagar State	3′ 3⅜″	Indian State.
4. Bikaner State	Ditto	(*a*) Bikaner State	3′ 3⅜″	Ditto.
5. Darjeeling Himalyan.	Darjeeling Himalayan Railway Company.	(*a*) Darjeeling Himalayan	2′ 0″	Company subsidized by Local Government.
		(*b*) Darjeeling Himalyan Extensions.	2′ 0″	Branch line Company under rebate terms.
6. Dibru-Sadiya	Assam Railways and Trading Company.	(*a*) Dibru-Sadiya	3′ 3⅜″	Company subsidized by Local Government.
		(*b*) Ledo and Tikak-Margherita Colliery.	3′ 3⅜″	Unassisted Company.
7. Gaekwar's Baroda State.	Indian State	(*a*) Gaekwar's Baroda State.	2′ 6″	Indian State.
		(*b*) Bodeli Chhota Udaipur.	2′ 6″	Ditto.
8. Gondal	Ditto	(*a*) Gondal	3′ 3⅜″	Ditto.
		(*b*) Jetalsar Rajkot	3′ 3⅜″	Ditto.
		(*c*) Khijadiya Dhari	3′ 3⅜″	Ditto.
9. Howrah-Amta Light.	Howrah-Amta Light Railway Company.	(*a*) Howrah-Amta Light.	2′ 0″	Company subsidized by District Board.
10. Jamnagar and Dwarka	Jamnagar and Dwarka Railway Company.	(*a*) Jamnagar	3′ 3⅜″	Indian State.
		(*b*) Jamnagar-Dwarka	3′ 3⅜″	Branch line Company under guarantee and rebate terms.†
		(*c*) Okhamandal	3′ 3⅜″	Indian State.
11. Junagad State	Indian State	(*a*) Junagad State.	3′ 3⅜″	Ditto.
12. Morvi	Ditto	(*a*) Morvi	3′ 3⅜″	Ditto.
13. Mysore	Ditto	(*a*) Mysore	3′ 3⅜″	Ditto.
		(*b*) Bangalore-Chik Ballapur Light.	2′ 6″	Company guaranteed by Indian State.
		(*c*) Kolar District	2′ 6″	Indian State.
		(*d*) Tarikere-Narasimharajapura Light.	2′ 0″	Ditto.
14. Shahdara (Delhi) Saharanpur Light.	Shahdara (Delhi) Saharanpur Light Railway Company.	(*a*) Shahdara (Delhi) Saharanpur Light.	2′ 6″	Company subsidized by the Government of India.*
CLASS III.—RAILWAYS.				
1. Aden	State	(*a*) Aden	3′ 3⅜″	State.
2. Ahmadpur-Katwa	Ahmadpur-Katwa Railway Company.	(*a*) Ahmadpur-Katwa	2′ 6″	Branch line Company under guarantee terms.
3. Arrah-Sasaram Light.	Arrah-Sasaram Light Railway Company.	(*a*) Arrah-Sasaram Light	2′ 6″	Company subsidized by District Board.
4. Bankura-Damoodar River.	Bankura-Damoodar River Railway Company.	(*a*) Bankura-Damoodar River.	2′ 6″	Branch line Company under guarantee terms.
5. Baraset-Basirhat Light	Baraset-Basirhat Light Railway Company.	(*a*) Baraset-Basirhat	2′ 6″	Company subsidized by District Board.
6. Bengal Provincial	Bengal Provincial Railway Company.	(*a*) Bengal Provincial	2′ 6″	Unassisted Company.
		(*b*) Dasghara-Jamalpurgunj.	2′ 6″	Branch line Company under guarantee terms.

* Receives land only from Government.
† Financed on rebate terms given by the Jamnagar Durbar.

Railway system.		Lines comprised in the system.		
Name.	Worked by	Name.	Gauge.	Owned by
1	2	3	4	5
CLASS III.—RAILWAYS—*concld.*				
7. Bukhtiarpur-Bihar Light.	Bukhtiarpur-Bihar Light Railway Company.	(*a*) Bukhtiarpur-Bihar Light.	2′ 6″	Company subsidized by District Board.
8. Burdwan-Katwa .	Burdwan-Katwa Railway Company.	(*a*) Burdwan-Katwa .	2′ 6″	Branch line Company under guarantee terms.
9. Cutch State . .	Indian State . .	(*a*) Cutch State . .	2′ 6″	Indian State.
10. Dehri-Rohtas Light .	Dehri-Rohtas Light Railway Company.	(*a*) Dehri-Rohtas Light .	2′ 6″	Company subsidized by the Government of India.
11. Dholpur-Bari . .	Indian State . .	(*a*) Dholpur-Bari . .	2′ 6″	Indian State.
12. Futwah-Islampur .	Futwa-Islampur Light Railway Company.	(*a*) Futwa-Islampur .	2′ 6″	Branch line Company under guarantee terms.
13. Gwalior Light . .	Indian State . .	(*a*) Gwalior Light .	2′ 0″	Indian State.
14. Howrah-Sheakhala-Light.	Howrah-Sheakhala-Light Railway Company.	(*a*) Howrah-Sheakhala Light.	2′ 0″	Company subsidized by District Board.
15. Jagadhri Light .	Jagadhri Light Railway Company.	(*a*) Jagadhri Light .	2′ 0″	Unassisted Company.
16. Jessore-Jhenidah .	Jhenidah Railway Syndicate.	(*a*) Jessore-Jhenidah .	2′ 6″	Ditto.
17. Jorhat (Provincial) .	River Steam Navigation Company and India General Navigation and Railway Company.	(*a*) Jorhat (Provincial) .	2′ 0″	State.
18. Kalighat-Falta .	Kalighat-Falta Railway Company.	(*a*) Kalighat-Falta .	2′ 6″	Branch line Company under guarantee terms.
19. Kulasekarapatnam Light.	East India Distilleries and Sugar Factories.	(*a*) Kulasekarapatnam Light.	2′ 0″	Unassisted Company.
20. Matheran Light .	Matheran Steam Tramway Company.	(*a*) Matheran Light .	2′ 0″	Company subsidized by the Government of India.*
21. Porbandar State .	Indian State . .	(*a*) Porbandar State .	3′ 3⅜″	Indian State.
22. Tezpore-Balipara Light	Tezpore-Balipara Steam Tramway Company.	(*a*) Tezpore-Balipara Light.	2′ 6″	Company Subsidized by District Board.
23. *Tirupati-Tiruchanur Light.*	Messrs. R. S. Manien & Co.	(*a*) *Tirupati-Tiruchanur Light.*	2′ 0″	Unassisted Company.
24. Trivellore Light .	T. Namberumal Chetty and Sons.	(*a*) Trivellore Light .	2′ 0″	Ditto.
25. Udaipur-Chittorgarh .	Indian State . .	(*a*) Udaipur-Chittorgarh .	3′ 3⅜″	Indian State.

* Receives land only from Government.

APPENDIX B.

Notes on the relation of the Government to Railways in India.

(Reprinted from the Report for 1914-15 and brought upto date.)

Diversity of Relations between the State and Railways.—One of the special features of the Indian Railway system is the diversity of conditions that prevails in the relation of the State to the various lines in respect of ownership and control. Of the important lines situated in British India or in which the Government of India is interested, five [the North Western,* Eastern Bengal, East Indian (with which has been amalgamated the Oudh and Rohilkhand Railway from the 1st July 1925), Great Indian Peninsula and Burma Railways] are owned and worked by the State; five (the Bombay, Baroda and Central India, Madras and Southern Mahratta, Assam-Bengal, Bengal-Nagpur and South Indian) are owned by the State but worked on its behalf by companies enjoying a guarantee of interest from the Government; three important lines (the Bengal and North-Western, Rohilkund and Kumaon and Southern Punjab†) and many of less importance are the property of private companies, some being worked by the owning companies and some by the State or by the companies that work State-owned systems; several minor lines are the property of District Boards or enjoy a guarantee of interest granted by such Boards.

The diversity of conditions is in certain respects less important than might at first appear for the following reasons:—

The Government of India exercises under the Indian Railways Act, 1890, in respect of all railways in British India (and also, by virtue of arrangements with Indian States, in respect of certain railways passing through such States), certain general powers. Thus a railway may not be opened until a Government Inspector has certified that it has been constructed so as to comply with requirements laid down by the Government and can be used for the public carriage of passengers without danger to them. The Government of India can also, in the interest of the safety of passengers, require a railway to be closed, or the use of particular rolling-stock to be discontinued, or may prescribe conditions for the use of the railway or the rolling-stock. They can appoint a Railway Commission to investigate complaints on certain matters such as the withholding of reasonable traffic facilities or the grant of undue preference.

In addition, the Government of India (or in some cases Local Governments) exercise under the provisions of contracts detailed control over the management of all Railways in British India greatly exceeding that which is secured by the Indian Railways Act. They also have a certain financial interest in all companies in British India, and a preponderating interest in most of the Railways which are of the first importance.

History of Relations of the Government and Companies.—The main causes which have led to the present diversity of conditions in regard to the agency by which railways are managed, and the relations of the Government with the various classes of companies now in existence, are summarised in the following paragraphs:—

The first proposals for the construction of railways in India were submitted in 1844 to the East India Company in England by Mr. R. M. Stephenson, afterwards Chief Engineer of the East Indian Railway, and others; they included the construction of lines by railway companies to be incorporated for the purpose and the guarantee by the East India Company of a specified return. A contract for the construction by the East Indian Railway Company of an experimental line of 100 miles from Calcutta towards Mirzapore or Rajmehal at an estimated cost of 1,000,000*l.* was made in 1849, and a return of 5 per cent. was guaranteed by the East India Company on the Capital; and a similar contract was made in the same year with the Great Indian Peninsula Railway Company for line from Bombay to Kalyan at an estimated cost of 500,000*l.* But the policy of entrusting generally the construction of Indian railways to guaranteed companies was not adopted until 1854 on the recommendation of Lord Dalhousie, who, in a minute, dated 20th April 1853, explained his reasons for preferring the agency of companies, under the supervision and control of the Government, to the construction of lines on behalf of the Government by its own officers. He held that the State Engineer officers would make railways as well, and possibly as cheaply, and as expedi-

* Includes the Delhi Umballa Kalka Railway which was purchased by the Secretary of State on 31st March 1926.

† Government has decided to purchase this line at the end of 1929.

tiously as companies; but that the withdrawal from other duties of the large number of officers required would be detrimental to the public interest, that the conduct of commercial undertakings did not fall within the proper functions of any Government and least of all within the functions of the Government of India, since the dependence of the population on the Government was, in India, one of the greatest drawbacks to the advance of the country, and that the country would therefore benefit by the introduction of English energy and English capital for railway purposes, with the possibility that such energy and capital would in due course be encouraged to assist in the development of India in other directions.

Old Guaranteed Railways.—The policy supported by Lord Dalhousie was adopted, and between 1854 and 1860 contracts for the construction of Railways in India were made by the East India Company, or (after 1858) by the Secretary of State for India with the East Indian, Great Indian Peninsula, Madras, Bombay, Baroda and Central India, Sind (afterwards, the Sind, Punjab and Delhi), Eastern Bengal, Great Southern of India (afterwards, when amalgamated with the Carnatic Railway Company —see below—the South Indian) and Calcutta and South-Eastern Railway Companies. Under these contracts the railway companies undertook to construct and manage specified lines, while the East India Company (or the Secretary of State for India) agreed to provide land and guaranteed interest on the capital, the rate fixed being in various cases 5, 4¾ and 4½ per cent. according to the market rates prevailing when the various contracts were made. Half of any surplus profits earned was to be used towards repaying to the Government any sums by which it had been called upon to supplement the net earnings of any previous period in order to make good the guarantee of interest; and the remainder was to belong to the shareholders. In practically all matters of importance except the choice of staff, the companies were placed by the contracts under the supervision and control of the Government which had power to decide on the standard and details of construction; the rolling-stock to be provided, the number, time and speed of trains; the rates and fares to be charged; the expenditure to be incurred; the standard of maintenance; and the form of accounts. The railways were to be held by the companies on leases terminating at the end of 99 years, and on such termination the fair value of their rolling-stock, plant and machinery was to be paid to them. But provision was also made to enable the Government to purchase the lines after 25 or 50 years on terms calculated to be the equivalent of the companies' interest therein and also to enable the companies to surrender their lines to the Government and to receive in return their capital at par.

Early Attempts to Secure Funds for Railway Construction without a Guarantee.—An attempt to secure the construction of railways in India, on terms more favourable to the Government than those of the contracts with the original guaranteed companies, was first made in 1862, when a subsidy, but not a guarantee, was granted to the Indian Branch Railway Company which proposed to make feeders to the trunk lines in Northern India, and did actually make one such line. Similar assistance was granted later to the Indian Tramway Company, which made a short line in Madras. In 1864, the terms granted to the two companies mentioned were taken as a standard for general adoption with a view to the encouragement of similar companies. The chief provisions were that the Government, besides giving the necessary land free of costs, would grant an annual subsidy for 20 years at a rate not exceeding £100 per mile of line with an addition in respect of large bridges costing more than £10,000. These terms failed to attract capital, and the two unguaranteed companies which had begun work found themselves after a few years unable to proceed without further assistance from the Government. Consequently, in 1867, a contract was entered into with the Indian Branch Railway Company (which soon after changed its name to the "Oudh and Rohilkhand Railway Company") by which the company was guaranteed interest at 5 per cent. per annum on the cost of certain lines to be carried out by it, on conditions similar to those laid down in the contracts of the period 1854—1860. Similarly, the Indian Tramway Company, after having been given in 1868 a guarantee of 3 per cent. per annum, went into liquidation in 1870, and became absorbed in a new company called the Carnatic Railway Company (afterwards amalgamated with the Great Southern of India Railway Company to form the South Indian Railway Company), with which the Secretary of State entered into a contract guaranteeing interest on its capital at 5 per cent. per annum. In 1869, Sir John Lawrence summed up the result of the experiment of the construction of railways by unguaranteed companies as follows:—"The Government of India has for several years been striving to induce capitalists to undertake the construction of railways in India at their own risk, and on their responsibility with a minimum of Government interference. But the attempt has entirely failed, and it has become obvious that no capital can be obtained for such undertakings otherwise than under a guarantee of interest fully equal to that which the Government would have to pay if it borrowed directly on its own account."

The attempt to encourage unguaranteed companies having thus been unsuccessful, it became necessary to decide whether the old practice of relying on guaranteed companies, of the type that had provided capital for, and had constructed, the first railways

in India, should be continued. The Government of India expressed their objections to this course. They doubted whether their power of control over such companies secured the greatest possible economy in construction. They also disliked the arragements under which they guaranteed the interest on the capital of companies, and thus became responsible for loss on working while having only a comparatively remote prospect of profiting by the result of successful working. Two important changes were consequently made in the practice that had been followed since the beginning of railway construction in India:—

1. Arrangements were made with some of the most important of the guaranteed companies that, in lieu of the provision that half of any surplus profits was to be applied in repayment of sums advanced by the Government under the guarantee of interest, half of the surplus profits for each half-year should be the property of the Government. In consideration of this modification, the Government relinquished, in the case of three companies, the Great Indian Peninsula, the Bombay, Baroda and Central India and the Madras, its right to purchase the lines at the end of the first 25 years from the dates of the respective contracts.
2. It was decided by the Secretary of State that the time had arrived when in both raising and expending such additional capital as might be required for new lines in India, the Government should secure to itself the full benefit of its own credit and of the cheaper methods which it was expected that it would be able to use. Accordingly, for several years after 1869, the capital expenditure on railways was chiefly incurred direct by the State and no fresh contracts with guaranteed companies were made except for small extensions. Among the lines constructed or begun by State agency and from State capital between 1869 and 1880 were the Indus Valley, Punjab Northern, Rajputana-Malwa, Northern Bengal, Rangoon and Irrawady Valley and Tirhoot.

Progress in the Construction of Railways.—By the end of 1879, in about 25 years from the introduction of railways in India, 6,128 miles of railway had been constructed by companies which had expended, approximately, £97,872,000 (these figures include the Calcutta and South-Eastern and Nalhati Railways which were constructed by companies but were purchased by the Government in 1868 and 1872, respectively). By the same date 2,175 miles of railway had been constructed by the Government at a cost of £23,695,226.

Introduction of Modified Guarantee Terms.—In 1880, the necessity for great and rapid extension of the railway system was urged by the Famine Commissioners, appointed after the great famine of 1878, who estimated that at least, 5,000 miles were still necessary for the protection of the country from famine. It was held by the Government of the time that a limit was necessary on the capital borrowed annually; and it was clear that the limit fixed was not high enough to allow of such progress in railway construction as was desirable. With reference to this difficulty the Famine Commissioners remarked: "that there would be manifest advantages in giving free scope to the extension of railways by private enterprise if it were possible; and, though the original form of guarantee has been condemned, it may not be impossible to find some substitute which shall be free from its defects, and may secure the investment of capital in these undertakings without involving the Government in financial or other liabilities of an objectionable nature."

Action in the direction suggested by the Commission was taken by the formation of three companies without a guarantee (the Bengal Central in 1881 and the Bengal and North-Western and Rohilkund and Kumaon in 1882), and three new guaranteed companies (Southern Mahratta in 1882, the Indian Midland in 1885, and the Bengal-Nagpur in 1887). The Bengal and North-Western and the Rohilkund and Kumaon Railway Companies are referred to more fully, in a later paragraph. The Bengal Central Railway Company's operation were not successful at the outset, and a revised contract was entered into with the company, with effect from the 1st July 1885, under which the Secretary of State guaranteed interest at 3½ per cent. on the company's capital the balance of net earnings remaining after payment of interest on advances by the Secretary of State and debenture capital (but not the share capital) being divided between the Secretary of State and the company in the proportions of three-quarters to the former and one-quarter to the latter. The new contract gave the Secretary of State the right to take possession of the line on the 30th June 1905, or subsequently at intervals of 10 years, on repaying the company's capital at par. The rate of interest guaranteed to the Southern Mahratta Railway Company was also 3½ per cent.; in this case the balance of net earnings remaining after payment of interest on advances by the Secretary of State (but not on share or debenture capital) was divisible in the same way as in the case of the Bengal Central Railway Company. The guarantee to the Indian Midland and Bengal-Nagpur Railway Companies was 4 per cent.; and the Secretary of State was entitled to three-quarters of the surplus profits in excess of all interest charges. The lines constructed by the three companies last mentioned were declared to be the property

of the Secretary of State, who had the right to determine the contracts at the end of approximately 25 years after their respective dates, or at subsequent intervals of 10 years, on repaying at par the capital provided by the companies.

The Assam Bengal Railway Company was formed on similar lines in 1892, except that any surplus profits were to be divided between the Secretary of State and the company in proportion to the capital provided by each. The rate of guarantee in this case was 3½ per cent. for the first six years and thereafter 3 per cent.

The terms of guarantee given to the companies formed since 1880 have thus been much more favourable to the Government than in the case of those formed before 1869.

Termination of Contracts of the Old Guaranteed Companies.—In dealing with the guaranteed companies formed before 1869 and with those formed in 1881 and subsequently, it has been the practice (except in the cases mentioned above, when the purchase of some of the old guaranteed lines was postponed in order to secure to the Government a share in surplus profits) to use in some way or other at the earliest possible date the right reserved by the Government of terminating the contracts of the various companies. The method of making use of this right has differed in different cases. The Eastern Bengal, Oudh and Rohilkhand and Sind-Punjab and Delhi lines were purchased and transferred to State management, the last named now forming part of the North Western Railway. Similarly, the Bengal Central line was purchased and made part of the Eastern Bengal Railway. The Madras and the Indian Midland lines were acquired but left, after acquisition, under the management of companies working other lines with which it was advantageous to amalgamate them. In the cases of South Indian, Bombay, Baroda and Central India, Southern Mahratta, and Bengal Nagpur, the course adopted has been to arrange for the continuance of management by the original company (or by a new company closely related to the old one), but to secure more favourable financial conditions for the State by one or more of the following methods:—reduction of the amount of capital retained by the companies in the undertakings, reduction of the rate of interest guaranteed by the State on such capital and modification in favour of the Government of the clauses relating to the division of surplus profits. This method was adopted also in regard to the East Indian and the Great Indian Peninsula Railways, but the contracts under which they were being worked having terminated on the 31st December 1924 and the 30th June 1925 respectively, the management of these lines has been taken over by State from those dates. Similarly the management of the Burma Railways was taken over by the State on the termination of the contract with the Burma Railways Company on the 31st December 1928.

Arrangements between the Government and Companies at present.—The relations between the Government and the guaranteed companies now working railways may be summarised as follows:—

The lines that they work are the property of the State.

The greater part of the capital is the property of the Government, either through having been originally supplied by it or through the acquisition by the Government of the greater part of the companies' interests on the termination of old contracts.

When funds are required for further capital expenditure, the Government has the option either of providing them or of calling on the company to provide them. Both the Government and the company usually receive interest at a fixed rate on their capital and surplus profits are divided between the Government and the company in the various proportions provided for by the contracts. The company's share is in most cases only a small proportion of the total amount.

All the contracts are terminable at the option of the Secretary of State, at specified dates; and on termination the company's capital is repayable at par.

The administrative control exercised by the Government over the companies is as follows:—

The company is bound to keep the line in good repair, in good working condition, and fully supplied with rolling-stock, plant, and machinery; to keep the rolling-stock in good repair and in good working condition; and to maintain a sufficient staff for the purposes of the line;—all to the satisfaction of the Secretary of State.

The Secretary of State may require the company to carry out any alteration or improvement in the line, or in the working that he may think necessary for the safety of the public or for the effectual working of the line.

The Secretary of State may require the company to enter into agreements, on reasonable terms and conditions, with the administrations of adjoining railways for the exercise of running powers, for the supply to one another of surplus rolling-stock, for the interchange of traffic and rolling-stock and the settlement of through rates, and for additions and alterations to, or the

redistribution of, existing accommodation in junctions or other stations in view to their convenient mutual use.

The train service is to be such as the Secretary of State may require. In order to secure a general control over the rates quoted by companies, the Secretary of State has retained power to settle the classification of goods and to authorise maximum and minimum rates within which the companies shall be entitled to charge the public for the conveyance of passengers and goods of each class.

The company has to keep such accounts as the Secretary of State may require, and these are subject to audit by the Secretary of State.

In all other matters relating to the line the company is made subject to the supervision and control of the Secretary of State, who may appoint such persons as he may think proper for the purpose of inspecting the line, auditing the accounts, or otherwise exercising the powers of supervision and control reserved to him. In particular, the Secretary of State has the right to appoint a Government Director to the Board of the company, with a power of veto on all proceedings of the Board. All the moneys received by the company in respect of the undertaking, whether on capital or revenue account, have to be paid over to the Secretary of State.

All expenditure by the company has to be stated and submitted for the sanction of the Secretary of State.

Thus, the Government has the preponderating financial interest in the lines worked by the two classes of guaranteed companies, those formed before 1869 and retained as working agencies with reduced capital after purchase, and those formed on terms more favourable to the State after 1880; it has exceedingly wide control over the methods of working; and it has the right of taking possession of the lines at specified times on repayment at par of the capital of the companies.

Other Lines worked by Companies.—In addition to the lines referred to above, and apart from lines constructed by Branch line companies, District Boards and Indian States, two lines of some importance have been constructed by companies which receive no direct assistance by the Government, namely, the Bengal and North-Western Railway and the Rohilkund and Kumaon Railway. (The Rohilkund and Kumaon Railway Company was guaranteed interest at 4 per cent. during construction and received for 10 years thereafter a subsidy of Rs. 20,000 per annum. This ceased in 1894.) While, however, these companies have no guarantee or other direct payment from the Government, they derive some advantage (partly through direct participation in profits and partly through reduction of expenses) from the fact that the working of certain State lines has been entrusted to them, the Tirhoot Railway to the former company and the Lucknow-Bareilly Railway to the latter. Their lines can be purchased by the State in 1932 on terms which are different in respect of the different sections of the lines, but are, on the whole, much more favourable to the companies than those provided for in the contracts with the guaranteed companies. Failing purchase in 1932, the lines will become the property of the State in 1981 on payment of certain amounts. The general administrative control exercised by the State over these companies and the control over expenditure are similar to that which is exercised, as explained above, over guaranteed companies.

APPENDIX C.

The Organisation for Government control.

The initial policy of the Government of India for the construction and working of railways was the establishment of guaranteed railway companies of English domicile. Control over the operations of these companies was at first secured through the appointment of a Consulting Engineer of Guaranteed Railways. Some years later local Consulting Engineers were appointed for the exercise of control over guaranteed railways and over State-owned railways in the construction of which the State had been financially interested and which had been leased to companies for working. These officers combined the duties of supervision and control on behalf of the Government of India and of an Inspector under the Government of India Railway Act. The Government of India were not directly concerned with the ownership of railways until 1868 when the Calcutta and South Eastern Railway was surrendered to the Indian Government under the terms of the contract between the Secretary of State and the Company.

Owing to the Government of India having in 1869 definitely adopted the policy of direct construction and ownership of railways, a period of rapid development of railway construction ensued and it became necessary to relieve the Public Works Department Secretariat of the Government of India in some measure of the detailed control of railways. Accordingly in 1874 a State Railway Directorate was established and the greater portion of the State Railway establishment and business connected with State Railway Administration was transferred to the control of the Director of State Railways, an officer who functioned on much the same lines as the head of a department under the Government of India. The Consulting Engineer to the Government of India for State Railways was at the same time associated with him but all important matters had still to be referred to the Public Works Department. A special Deputy Secretary in the Railway Branch of the Secretariat of the Public Works Department was also appointed to conduct the correspondence between the Government of India and these officers.

Early in 1877 a further change was made in the organisation responsible for the administration and control of State Railways and in the place of one Director of State Railways three Directors of territorial systems and one Director of State Railways Stores were appointed. These territorial divisions comprised the following systems:—

Central	1,179 miles.
Western, and	927 miles.
North Eastern	830 miles.

This division of the administration on a territorial basis proved unsatisfactory in practice as it resulted in the issue of conflicting orders as far as the management of open lines was concerned although no difficulty was experienced in the supervision of new construction.

As the number of lines under construction had decreased and in order to remedy the defect just mentioned, it was decided in 1880 to abolish the Directors of the Central and Western Systems and to transfer the work allotted to them to the Consulting Engineers of the neighbouring guaranteed railways. The abolition of these two appointments resulted in an increase in the administrative work of the Secretariat and it was found necessary to raise the status of the Deputy Secretary to whom the powers previously exercised by the Directors had been entrusted, to that of Director General of Railways.

In the revised organisation the Consulting Engineer to the Government of India for State Railways was associated with the Director General of Railways and assisted the latter primarily in an advisory capacity in matters of civil engineering while the Director of Stores similarly acted in matters concerning stores and rolling-stock and at the same time was an adviser in matters affecting establishment. The Director of Traffic was appointed at the same time as an adviser on traffic problems and the accounts work of the department was placed under the Accountant General, Public Works Department.

Government control and supervision of the Guaranteed Railways continued to be exercised by the Local Consulting Engineers to Government. There were five such officers at the time with headquarters at Bombay, Madras, Calcutta, Lahore and Lucknow. The Consulting Engineers at Madras and Bombay worked directly under the Government of these Presidencies, while those at Calcutta, Lahore and Lucknow were under the immediate orders of the Government of India. Under this arrangement practically all powers affecting the finances and day to day management of the railways were vested either in the Consulting Engineers or in the Government, both

for the guaranteed railway companies and later on for State Railways which had been leased for working to railway companies.

The following is a list of the administrative appointments that existed in 1881:—

1. Member of the Governor General's Council, Public Works Department.
2. Secretary, Public Works Department.
3. Deputy Secretary, Railway Branch.
4. Under Secretary, Railway Branch.
5. Consulting Engineer of State Railways.
6. Director General of Railways.
7. Director of Construction.
8. Accountant General, Public Works Department.
9. Director of State Railways, Stores.
10. Three Assistants to the Director General of Railways.
11. Consulting Engineers for Guaranteed Railways at Calcutta, Lahore and Lucknow.
12. Deputy Consulting Engineers for Guaranteed lines, Calcutta, Lahore and Lucknow.

Madras and Bombay.

13. Joint Secretary, Railway Branch and Consulting Engineer for Railways.
14. Deputy Secretary, Public Works Department.

Punjab.

15. Secretary, Public Works Department.

By this time also Local Governments and Administrations had been induced to take a practical interest in the management of railways and in a few cases short extensions had been constructed from funds the interest of which Local Governments had accepted responsibility to pay. Such lines were controlled by the Local Governments concerned under the general supervision of the Government of India.

After 1881 further alterations of a more or less detailed character were made in the administrative organisation and by 1890 the following changes had taken place. Instead of a Deputy Secretary and Under Secretary, Railway Branch, there were then only an Under Secretary and an Assistant Secretary, Railways in the General Branch. The posts of Director of State Railways, Stores, and Director of Construction had disappeared and in their place there was an Under Secretary, who was an *ex-officio* Deputy Director General of Railways. The post of Accountant General, Railways, had also been abolished and the Accountant General, Public Works Department, was once more made responsible for this work.

Further changes were made in 1897. In that year the post of Director General of Railways was abolished and the post of a Secretary to the Government of India in the Public Works Department was created in its place. The other administrative and secretariat appointments at the headquarters of the Government of India at the time were:—

(1) Director of Railway Construction, and Deputy Secretary and *ex-officio* Director of Stores.

(2) Director of Railway Traffic, and Deputy Secretary and *ex-officio* Director of Railway Statistics.

(3) Two Under Secretaries.

(4) Two Assistant Secretaries.

(5) One Mechanical Assistant.

The post of Consulting Engineer for State Railways was also abolished and his duties transferred to the two Directors. The supervision of the accounts work of the Department, however, still remained under the Accountant General, Public Works Department, who was also an *ex-officio* Deputy Secretary to the Government of India.

In October 1901, Sir Thomas Robertson, C.V.O., was appointed by His Majesty's Secretary of State for India in Council as Special Commissioner for Indian Railways to enquire into and report on the administration and working of Indian Railways. In his report, which became available in 1903, Sir Thomas recommended that the administration of the railways in India should be entrusted to a small Board consisting of a President or Chief Commissioner who should have a thorough practical knowledge of railway working, and should be a member of the Viceroy's Council for railway matters, and two other Commissioners who should be men of high railway standing

and should have a similar training to that of the President. He recommended that the Board should, in addition to the necessary office establishment, be provided with—

(1) A Secretary who should have received a suitable training in the practical working of railways, and who should be *ex-officio* a Secretary to the Government of India.

(2) A Chief Inspector of Railways, to advise on all technical, engineering and mechanical questions.

(3) A suitable number of Government Inspectors.

Sir Thomas Robertson's recommendations were carefully considered by the Governor General in Council and the Secretary of State, and early in 1905 it was decided that the Railway Branch of the Public Works Department of the Government of India should be abolished and that the control of the railway systems in India should be transferred to a Railway Board consisting of three persons, a Chairman and two Members. The Chairman of the Board was vested with the general control of all questions committed to the Railway Board with power to act on his own responsibility subject to confirmation by the Board. The Railway Board were authorised to delegate to the Chairman or a member the power of settling questions which might arise on any tour of inspection, such decision to be recorded subsequently as an act of the Railway Board. The Board was made subordinate and directly responsible to the Government of India in the Department of Commerce and Industry.

The Railway Board assumed office in March 1905 and were provided with the following establishment:—

1. Secretary.
2. Examiner of Accounts.
3. Under Secretary, Construction.
4. Under Secretary, Traffic.
5. Registrar.
6. Director of Railway Construction.

Certain changes were, however, made in the following year and the establishment then consisted of:—

1 Secretary.

3 Assistant Secretaries; one each for Establishment, Construction and Traffic.

1 Registrar.

1 Director of Railway Construction.

1 Railway Accounts Officer.

Sir Thomas Robertson had further suggested in his detailed recommendations that extended powers, both administrative and financial, should be delegated to Boards of Directors of Companies, that the appointments of Consulting Engineers should be abolished and that the work which they performed under the Railways Act should be entrusted to a body of Government Inspectors to be appointed for the purpose. These recommendations were given effect to in a modified form in 1908.

Within a short time after the constitution of the Railway Board, it was found that work was being hampered by having the Commerce and Industry Department between the Railway Board and the Governor General in Council and in October 1908 on the recommendations of the Railway Finance Committee presided over by Sir James Mackay (now Lord Inchcape), the following changes were introduced:—

1. The appointment of the Chairman of the Railway Board was changed into that of President of the Railway Board and enhanced powers were vested in the President.
2. The Board with its staff became collectively the Railway Department distinct from and independent of the Department of Commerce and Industry, though remaining under the administrative charge of the Hon'ble Member, Commerce and Industry Department, as the Railway Member.
3. The President of the Board was given direct access to the Viceroy as if he were a Secretary to the Government of India.

At the same time in consequence of the amalgamation of the Public Works Department Accounts and Civil Audit Establishments under the control of the Finance Member of the Government of India the appointment of Accountant General, Public Works Department, was abolished and the appointment of Accountant General, Railways, was revived.

In 1909 the post of Director of Railway Construction was abolished and the appointment of Chief Engineer with the Railway Board for the purpose of advising the Railway Board on technical matters connected with Civil Engineering was created.

In January 1914, it was decided that the importance of financial and commercial considerations in connection with the control of Indian railway policy justified a modification of the rule that the President and Members of the Railway Board should all be men of large experience in the actual working of railways. It was then decided that in future one member who equally with the others might be appointed President should be selected for commercial and financial experience and a member with the necessary qualifications was appointed.

This arrangement was, however, altered in 1920 when it was decided that all the three members of the Board should possess railway experience. To assist the Board, however, in the consideration of financial questions, the post of Financial Adviser to Railway Board was created.

Owing to the expansion of railways in India and the increased work thrown on the Board a second Assistant Secretary, Engineering, was appointed in 1914, and in 1916 the duties of the Construction Branch were divided between one branch dealing with Projects under an Assistant Secretary and a second branch dealing with Way and Works which was sometimes under a separate officer and at other times under the Secretary or Chief Engineer. In 1922 the charge of the Way and Works branch was divided between the Assistant Secretary in charge of Projects and the Assistant Secretary in charge of Stores.

In November 1922, the Board's establishment was strengthened by the appointment of a Chief Mechanical Engineer. This appointment was created to enable the Board to have at headquarters a reliable adviser on matters connected with mechanical engineering.

During 1921 a Committee presided over by Sir William Acworth visited India and one of the questions referred to was the evolution of a satisfactory authority for the administration of the varied functions which the Railway Board had to perform as:—

(*a*) the directly controlling authority of the three State-worked systems aggregating 9,028 miles,

(*b*) representative of the predominant owning partner in systems aggregating 22,949 miles,

(*c*) the guarantor of many of the smaller companies,

(*d*) the statutory authority over all railways in India.

The Acworth Committee recommended in their report:—

(1) that a new Department of Communications responsible for railways, ports and inland navigation, road transport and posts and telegraphs under a Member of Council in charge of Comunications should be created,

(2) that under the Member of Council for Communications there should be a technical staff consisting on the railway side of a Chief Commissioner and four Commissioners and that of the four one should be in charge of finance and the organisation and staff of the office and the other three Commissioners should be in charge of three respective divisions, Western, Eastern and Southern,

(3) that the technical staff attached to the Commission should be strengthened specially on the traffic side.

The Government of India, though they did not accept the first recommendation of the Acworth Committee, agreed to the re-organisation of the Railway Board being undertaken on the principles underlying the report of the Acworth Committee. The appointment of a Chief Commissioner was accordingly sanctioned in November 1922, and in accordance with the recommendations of the Acworth Committee he is solely responsible, under the Governent of India, for arriving at decisions on technical questions and advising the Government of India on matters of Railway policy; he is not liable to be over-ruled, as the President was, by his colleagues in the Railway Board.

The first duty of the Chief Commissioner was to work out detailed proposals for the re-organisation of the Railway Board and as a first step he made recommendations to the Government of India for the immediate appointment of a Financial Commissioner. This recommendation was strongly endorsed by the Indian Retrenchment Committee and the appointment of the Financial Commissioner was made in April 1923 with the sanction of the Secretary of State. The further proposals of the Chief Commissioner for the re-organisation of the Railway Board were accepted by the Government of India and the Secretary of State and were introduced from the 1st April 1924. It was decided, however, for reasons connected with the present statutory position of the Railway Board, and to avoid confusion with the provisions for a Railway Commission under Chapter V of the Railways Act, to retain the name "Railway Board" for the headquarters organisation of the Railway Department instead of "Railway Commission" as recommended by the Acworth Committee.

The Railway Board as now constituted consists of the Chief Commissioner as President, the Financial Commissioner and two Members, the Chief Commissioner being Secretary to the Government of India in the Railway Department. The proposal of the Acworth Committee that the Indian Railways should be sub-divided into three territorial divisions with a Commissioner in charge of each was not accepted, and the work of the Members of the Board is now divided on the basis of subjects and not on a territorial basis. One Member deals with technical subjects and the other with general administration, personnel and traffic subjects, the Financial Commissioner representing the Finance Department on the Board and dealing with all financial questions.

The reorganisation carried out in 1924 had for one of its principal objects the relief of the Chief Commissioner and the Members from all but important work so as to enable them to devote their attention to larger questions of railway policy and to enable them to keep in touch with Local Governments, railway administrations and public bodies by touring to a greater extent than they had been able to do in the past. This object was effected by placing a responsible Director at the head of each of the main branches of the Board's work, namely Civil Engineering, Mechanical Engineering, Traffic and Establishment. The former Chief Engineer and the Chief Mechanical Engineer who had been employed mainly in consultative work, became Directors and together with the Directors of Traffic and Establishment have been made responsible for the direct disposal of the work of their branches under the general orders of the Railway Board.

The posts of Joint Secretary and 4 Assistant Secretaries were replaced by 6 Deputy Directors working under the Directors and in charge of branches dealing with Establishment, Works, Projects, Stores, Statistics and Traffic. One Assistant Director was also added to supervise the Technical Branch and the Drawing Office. The disposal of the general work of the Railway Board was provided for by the continuance of the post of Secretary in whose name all letters and orders of the Board are issued. The position of the Board as a Department of Government of India has been maintained and it works under the Member for Commerce and Railways. As already stated the Chief Commissioner is the Secretary to the Government of India in the Railway Department and orders issued by the Board over the signature of the Secretary are orders of the Government of India.

Experience of the working of this organisation during 1924-25 and the decision agreed to by the Legislative Assembly in September 1924 to separate railway finances from the general finances of the country made it necessary to appoint a Deputy Director and an Assistant Director of Finance. An Assistant Director of Statistics was also added during that year. Later a Director of Finance was added to the establishment occupying, as regards disposal of work, the same position as the Directors referred to above.

Further experience of the reduction of work resulting from the large delegation of powers and responsibility to the Agents of State-managed Railways and the Board of Directors of Company-managed railways enabled a re-arrangement of work to be made during 1925-26 accompanied by a reduction in the staff. Under this re-arrangement the posts of 3 Deputy Directors, an Assistant Director and the Assistant Secretary were held in abeyance. The personnel work was transferred from the Director of Establishment to the Secretary and a temporary post of Deputy Secretary was created. Further a separate technical office was established to take charge of the technical work of the engineering branches. The Technical Officer also acts as *ex-officio* Secretary to the permanent Standardisation Committees which have been appointed to deal progressively with all questions of standards of equipment.

The present superior staff under the Railway Board, therefore, consists of 5 Directors, 4 Deputy Directors, a Technical Officer, 2 Assistant Directors, a Secretary and a Deputy Secretary.

APPENDIX D.

Resolution regarding the separation of railway from General Finances, adopted by the Legislative Assembly on the 20th September 1924.

"This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways.

(1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.

(2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent. on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year *plus* one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent. on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge of, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

(3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve; provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.

(4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced.

(5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.

(6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Assembly from their body. The members of the Standing Finance Committee for Railways shall be *ex-officio* members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight selected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.

The Railway Department shall place the estimate of railway expenditure before the Standing Finance Committee for Railways on some date prior to the date for the discussion of the demand for grants for railways and shall, as far as possible, instead of the expenditure programme revenue show the expenditure under a depreciation fund created as per the new rules for charge to capital and revenue.

(7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and the Member in charge of railways shall then make a general statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and

the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after separation, the detail it shall give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

(8) These arrangements shall be subject to periodic revision but shall be provisionally tried for at least three years.

(9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to Company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends—

(*i*) that the railway services should be rapidly Indianised, and further that Indians should be appointed as Members of the Railway Board as early as possible, and

(*ii*) that the purchases of stores for the State Railways should be undertaken through the organisation of the Stores Purchase Department of the Government of India."

APPENDIX E.

Government of India, Railway Department, Resolution No. 2131-F., dated the 19th February 1925, on the subject of the financing of branch lines of railways.

The Governor General in Council, with the sanction of His Majesty's Secretary of State for India, is pleased to issue the following orders on the subject of Financing of Branch Lines, in suppression of all previous orders on the subject.

1. Branch and Feeder Lines are constructed under an agreement by which the State guarantees a minimum return on the capital, or alternatively, undertakes that the line shall receive, out of the earnings of the main line from traffic contributed by the branch, such a sum, known as a rebate, as will make up the total earnings of the branch to a given sum, while the branch in each case shares with the main line any profits exceeding the guaranteed minimum.

2. This method of encouraging the construction of lines originated 30 years ago simply because the Government of India was unable to furnish the necessary capital.

3. The Acworth Committee pointed out that this method, while enabling lines to be built which would otherwise not have been built, has no other merit. The financial terms usual before the war are now quite inadequate and if the system is to continue they will have to be revised. All the witnesses before the committee who asked for a revision of the terms admitted that, if the main line were in a position to build a given branch itself, they would prefer that it should be done by the main line rather than that it should be done as a separate undertaking.

4. Amongst the disadvantages pointed out by the Committee are the following:—

(*i*) The Branch Line Company is usually a fifth wheel to the coach. It implies in some cases a separate construction staff; it always implies a separate Board of Directors, and separate accounts.

(*ii*) Where the branch is worked by the main line, if its Directors feel that the management is unsatisfactory, they not only make representations to the main line administration, but in the last resort can appeal to the Railway Board which does not make for harmony.

(*iii*) Capital raised by a small private undertaking, even with a Government guarantee, will cost more than money raised by the State.

(*iv*) Inconceivable confusion results from the multiplication of independent Railway Companies—each company, small or great, desires to reserve for itself a separate sphere of influence; and jealously demands that, if any new-comer intrudes into that sphere, he shall pay toll to the original concessionaire. This only complicates a situation which ought to be considered solely from the point of view of the public interest. New proposals for the extension or connection of lines by small independent companies are either refused owing to protests by the old company or only permitted on a basis of elaborate accounting between the new company and the old for the profits which hypothetically would have belonged to the old line had the new line not been opened.

5. The only arguments urged in favour of the Branch Line Companies were:—

(*i*) That money had been raised which the Government of India was unable to furnish.

(*ii*) That a claim was made that the Branch Line Company obtained from local sources money that would never be subscribed to a Government loan.

(*iii*) That there may be cases of a Branch Line of smaller gauge *worked independently*, which the Branch Line Company can operate more economically than a main line.

6. The Acworth Committee, therefore, so far from approving of this system considered that the aim of the Government should be to reduce by amalgamation the number of existing companies and that it should only be in cases where the State cannot or will not provide adequate funds that private enterprise in the direction should be encouraged.

7. The disadvantages pointed out by the Acworth Committee required to be even further amplified. The existing Branch Line Companies have ceased for some time to raise additional capital for capital requirements. They have either obtained overdrafts from various Banks for this purpose at heavy rates of interest or issued debentures at special rates of interest (usually about 7 per cent.) or in several cases asked

for money to be advanced to them by the Railway Board. So far, therefore, from reducing the amount that the Government of India have to raise in the open market, they are at present increasing that amount.

8. Another serious disadvantage which is not mentioned by the Acworth Committee is that the main line usually works the Feeder or Branch Line for a remuneration which, in most cases, is limited to a maximum of a fixed percentage of the gross earnings of the Branch Line (usually 40 per cent. or 50 per cent.)—terms of remuneration which at present are grossly inadequate. The result of this arrangement is that many of the main lines whose working expenses are from 60 to 80 per cent. of the gross earnings are saddled with heavy expenditure which ought to have been debited to Branch Line Companies. Where the Branch Line Companies are " successful," that is, where the shares stand at a high figure, their profits are inflated owing to their working expenses being thus artificially reduced. Again, where in the case of less " prosperous " Branch Line Companies, the Government has to make a direct subsidy in order to make up the guaranteed interest on the capital, the amount paid by way of subsidy does not reveal the true loss of the Government in connection with the Branch Line Company. To this subsidy should be added also the additional loss incurred from the main line working the Branch Line at less than the actual cost. Even this, however, does not give a complete statement of the loss sustained by Government in connection with these Companies. These Companies have been supplied with land free of charge and the cost of such land is not taken into account either in the Capital or the Revenue Accounts of the Companies concerned.

9. The only real argument in favour of these Companies is that they must be utilised in cases where the Government itself is unable or declines to raise the necessary amount of capital for new constructions. It is doubtful whether such a position is likely to recur in the future. It is admitted that to use the agency of these Companies is a far more expensive method of raising money for the construction of railways than direct Government loans can ever be. The amount of assistance given by Branch Line Companies in the past has been trivial; the total amount of capital raised through the agency of Branch Line Companies has only been about Rs. 10¾ crores—an amount which in itself is less than the lapse that occurred last year in the provision for capital expenditure in the Railway Budget.

10. The difficulties and complications now experienced in connection with these Branch Line Companies are out of all proportion to the insignificant financial facilities offered by the Companies. The Government of India have therefore decided that the Branch line policy should be abandoned and that an endeavour should be made to reduce the number of the existing Branch Line Companies. If on any occasion the Government of India should be unable to find funds for construction (which is not the case at present), and should it be considered advisable to tap fresh sources for subscription to railway loans by offering terms different from those given to the ordinary Government loans, that is, by offering not only a fixed rate of interest, but a share in the profits of a particular Branch Line, there appears to be no particular advantage of using a financial half-way house specially to float a loan on such terms; there appears to be no reason why the Government should not float the loan direct. But it will probably be found sufficient to raise short term debentures at a high rate of interest—to be liquidated when the loan market is favourable—a procedure adopted now by the Branch Line Companies, but at a higher rate of interest than would be necessary for the Government.

11. There remains the case of the District Board Railways for which some of the capital or the security for the captial is secured by a special cess levied by the District Board throughout the district.

The Acworth Committee pointed out that where a District Board was the promoter of a new Branch Line, considerations other than purely commercial came into play with the result of further complications and confusion. In a footnote to the report they referred to the views expressed by the Madras Government who had drawn attention to a case in which, although no short-circuiting was involved, there had been a delay of over 10 years in arriving at a decision in regard to the terms for working a District Board Railway by the South Indian Railway Company. The amount of capital raised by District Boards for such lines has been only Rs. 137 lakhs while the amount raised by Company lines subsidised by District Boards amounts to Rs. 2¼ crores. These amounts are insignificant as compared with the total capital raised by the Government and it is clear that the relief afforded to the Government of India in raising the loans is quite disproportionate to the great complications which have resulted in the working of the railway administration. Loans raised direct by the District Boards do not relieve the market of the Government of India; the money is ultimately borrowed from the Government of India.

12. The legal position regarding the powers of District and Local Boards in the matter of railway construction and management depends in part on the Indian Railways Act, 1890, which, in the absence of express exclusion of its application, extends to all District Board railways and, in part on the nature of the provision made in the

matter in the District or Local Boards Act of the province concerned. It is only in the Madras Presidency that the question has assumed prominence and it will suffice to indicate briefly the nature of the provisions contained in the Madras Local Boards Act, 1920. Action under section 113 of that Act can only be taken " with the previous sanction of the Government of India." Having obtained such sanction, a District Board may either itself construct and maintain a railway within, or partly within, the local area under the control of the Board, or may subscribe to any debenture loan raised by the Government of India or by any other local authority or by any company for the construction or maintenance of any railway which the Board considers likely to be of benefit to the district, or may guarantee the payment from the district fund of such sums as it shall think fit as interest on capital expended on any such railway (that is, whether the railway is constructed by the Government of India or by any other local authority or by a Company).

Section 236 of the same Act provides that the accumulations of a local railway cess may be utilised for all or any of the purposes specified in section 113, including the guaranteeing of payment of interest on capital spent on a railway.

A District Board in Madras, therefore, can guarantee the payment from the district fund of the money sufficient to make up minimum interest on capital expended on a railway within its area whether such railway is constructed by the Government of India or by a Company, the only disadvantage attaching to this particular form of guarantee being that the Act does not make the payment of the guaranteed interest a first charge on the District Board Fund.

13. The Government of India could not reasonably use their powers under the Indian Railways Act, 1890, or under, *e.g.*, section 113 of the Madras Local Boards Act, 1920, to prevent a District Board or a local body from constructing a light railway or a tramway which had no physical connection with any existing main line and which that local body proposed to work itself or through a local company. But as things stand at present there is no reason for continuing the practice under which District Boards are allowed to make money out of Branch Lines connected with a main line when they themselves cannot make any arrangements for the working of the lines and require to have them run by the main lines.

14. These District Board railways must not be confused with the light and feeder railways which constitute a provincial subject under the Devolution Rules. The provincial subject in question comprises " light and feeder railways and extra-municipal tramways in so far as provision for their construction and management is made by provincial legislation." That is to say, it comprises only individual light or feeder railways or extra-municipal tramways for the construction and management of which specific provision has been made by an Act of the local legislature of the province concerned. Hitherto, no such legislation has been enacted with the result that the entry in question in the provincial schedule, as also the qualifying words to entry 5 (*a*)* in the central schedule, have no operation, and all existing railways of every description are included in the central subject defined in the last-named entry. It should also be observed that the provincial subject in question is " subject to legislation by the Indian Legislature in the case of any such railway or tramway which is in physical connection with a main line or is built on the same gauge as an adjacent line," the effect being that a provincial bill designed to provide for the construction of a light or feeder railway or extra-municipal tramway in physical connection with a main line or built on the same gauge as an adjacent main line would require the previous sanction of the Governor General under clause (*f*) of sub-section (3) of section 80 A of the Government of India Act; and it may be presumed that few occasions are likely to arise in which provision will be made by local legislation for the construction of a light or feeder railway not answering one or other of these descriptions.

15. The proposal set forth in this Resolution are not designed to evade the legitimate operation of the legal position described, in the case of District Board railways, in paragraph 12 and in the case of provincial light and feeder railways, in paragraph 14; but it follows from the proposal that Local Governments and District or Local Boards should not, in the absence of special circumstances, be encouraged to build branch or feeder lines. In other words, the normal procedure will be the construction by the Government of India, or, at its cost, by a Company, of a branch line which a District Board or Local Government desires to have constructed and is prepared to guarantee. But, should the railway programme not permit the construction of such a line within a reasonable time, the possibility of permitting a District Board or Local Government to construct it from its own funds would require consideration.

Unremunerative Lines.

16. The above proposals relate to the procedure adopted in the past and the procedure which it is proposed to adopt in the future for the financing of the con-

* " Railways and extra-municipal tramways, in so far as they are not classified as provincial subjects under entry 6 (*d*) of Part II of this Schedule."

struction of branch or feeder lines expected to prove remunerative from the point of view of railway earnings only. But there are cases where the Local Governments or local authorities may desire that a line should be constructed which will not be remunerative on railway earnings and the construction of which is desired by them for purely local reasons on account of the administrative advantages it is likely to confer or for the development of a particular area. It is proposed that in future the Railway Board in such circumstances should have power to arrange for the construction of the line from railway funds if the Local Government or the local authority guarantees the Railway Board against loss. The guarantee would be to the effect that the local authority would make up the difference between the net earnings and the interest and other charges payable. As it is not desirable that the Central Government should make any profit out of such contributions by local authorities, it is also proposed that where contributions have been made by a local authority for this purpose the repayment of such contributions should be a first charge on any net profits subsequently realised from the line, should the line prove remunerative.

17. The Central Government must, however, retain the power to decide whether a line is to be built or not; the proposals in the preceding paragraph must not be taken to imply that a Local Government by giving a guarantee can require the Railway Board to construct a line. Proposals of a Local Government might run counter to the general railway policy or might take the form of short-circuiting railway traffic and so lead to a reduction of receipts from existing lines.

18. These proposals have been circulated to Local Governments and have been generally welcomed by them as affording a suitable method of reconciling central and local interests and of providing for local bodies and Local Governments a method of securing the construction of railways which may be required for purely local reasons, and which, while not likely to prove remunerative on purely railway earnings, are likely to provide such indirect benefits to Local Governments and local bodies as will more than repay the amounts paid under the guarantee. Several such arrangements have already been made with Local Governments.

APPENDIX F.

Statement of Gazetted Officers and Officers of corresponding rank employed on Class I Railways, Railway Board and other Railway Offices (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1929 as compared with 1st April 1928.

Item.	A. B.		B. N.		B. & N. W.		B., B. & C. I.		Burma.		E. B.		E. I.		G. I. P.		M. & S. M.		N. W.		R. & K.		S. I.		Ry. Board and Miscellaneous officers.		Total.	
	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1. *Agency Department*—																												
1·01. Europeans	3	3	4	6	4	3	7	8	3	3	4	4	5	5	8	6	4	4	7	6	1	1	3	3	4*	4	57*	56
1·02. Statutory Indians—																												
(*a*) Hindus	..	..	2	2	..	..	..	..	..	..	..	..	1	1	..	1	2	2	..	..	..	..	2	3	..	..	7	9
(*b*) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	..	..	..	..	..	2	2
(*c*) Anglo-Indians	..	..	1	1	..	..	1	1	1	1	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	5	5
(*d*) Other classes	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	..	1	1	..	..	..	..	..	..	3	3
(*e*) Total	..	..	3	3	..	..	1	1	2	2	..	..	4	4	1	2	2	2	2	2	..	..	2	3	..	..	17	19
1·03. Grand total	3	3	7	9	4	3	8	9	5	5	4	4	9	9	9	8	6	6	9	8	1	1	5	6	4*	4	74*	75
2. *Engineering Department*—																												
2·01. Europeans	19	18	69	66	21	21	43*	39	43*	40	38*	32	64	59	77	75	47	4	75	74	5	4	46	40	19*	19	566*	531
2·02. Statutory Indians—																												
(*a*) Hindus	4*	4	16	17	2	2	13*	14	3	6	16*	14	45	33	9	10	18	14	47	50	..	..	22*	19	..	1	195*	184
(*b*) Muslims	2	3	2	2	..	..	1*	1	1	1	..	1	6	7	2	2	1	..	8	9	..	..	2	2	..	..	25*	28
(*c*) Anglo-Indians	3	3	10	12	..	1	8*	6	7*	8	3*	3	17	14	2	1	3	..	19*	13	..	..	2	2	1	1	75*	66
(*d*) Other classes	1*	1	2	2	..	..	3*	3	..	..	3	3	5	5	7	6	..	..	8	7	..	..	2*	3	..	..	31*	30
(*e*) Total	10	11	30	33	2	3	25*	24	11*	15	22	21	73	59	20	19	22	16	82*	79	..	..	28	26	1	2	326*	308
2·03. Grand total	29	29	99	99	23	24	68*	63	54*	55	60*	53	137	118	97	94	69	60	157*	153	5	4	74	66	20*	21	892*	839
3. *Transportation*—																												
3·01. Europeans	10	8	32	30	12	13	29	29	27	28	18*	17	37	39	43	48	22	20	39*	34	Included under Commercial.		13	10	17*	17	299*	293
3·02. Statutory Indians—																												
(*a*) Hindus	1	2	10	10	2	2	5	6	..	..	10	8	6	6	2	4	6	6	11	11	..	..	6	6	2	3	61	64
(*b*) Muslims	1	1	3	3	..	..	2	2	..	..	4	5	7	6	1	1	..	..	7	6	..	..	..	..	1	2	26	26
(*c*) Anglo-Indians	2	3	2	2	..	..	3*	3	1	1	6*	5	10	5	3	4	3	3	2	4	..	..	1	1	1	1	34*	32
(*d*) Other classes	..	..	..	..	..	..	4*	4	5	7	..	..	1	1	..	..	..	..	1	2	..	..	..	1	..	1	11*	16
(*e*) Total	4	6	15	15	2	2	14	15	6	8	20*	18	24	18	6	9	9	9	21	23	..	..	7	8	4	7	132*	138
3·03. Grand total	14	14	47	45	14	15	43	44	33	36	38	35	61	57	49	57	31	29	60*	57	..	..	20	18	21*	24	431	431

4. Commercial—																															
4·01. Europeans	..	1	Included under Transportation.		3	3	Included under Transportations						5	7	15	16	Included under Transportation.		9*	12	2	2	5	7	..	..	39*	48
4·02. Statutory Indians—																															
(a) Hindus	..	..	..	..	..	..	..	..	..	..	..	..	1	1	8	7	..	..	1	2	..	..	5	5	..	..	15	15
(b) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	1	1	..	1	..	..	4	6
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	10	8	3	2	..	..	1	..	..	..	..	..	..	..	14	10
(d) Other classes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
(e) Total	..	1	..	..	3	3	..	..	..	..	..	..	11	9	11	9	..	..	6	6	1	1	5	6	..	..	34	31
4·03. GRAND TOTAL	..	..	..	..	..	..	..	..	..	..	..	..	16	16	26	25	..	..	15*	18	3	3	10	13	..	..	73*	79
5. Mechanical Engineering—																															
5·01. Europeans	8	9	24*	24	14	13	32	33	20	21	21	22	44	46	25	24	23	23	44	49	2	3	19	18	4*	5	280*	281
5·02. Statutory Indians—																															
(a) Hindus	..	..	1	1	..	..	1	1	..	..	1	3	5	6	5	4	..	..	2	5	..	..	1	2	..	..	16	22
(b) Muslims	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	2	3
(c) Anglo-Indians	..	1	..	..	..	..	1	1	1	1	2	..	3	3	..	..	..	..	1*	4	..	..	..	..	..	..	8*	10
(d) Other classes	..	..	..	..	..	..	..	..	..	..	2	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	3	3
(e) Total	1	2	1	1	..	..	2	2	1	1	5	5	9	10	5	4	..	..	4	11	..	..	1	2	..	..	29*	38
5·03. GRAND TOTAL	9	11	25*	25	14	13	34	35	21	22	26	27	53	56	30	28	23	23	48	51	2	3	20	20	4*	5	309*	319
6. Stores Department—																															
6·01. Europeans	1	..	6	6	1	1	6	6	1	1	2	2	5	5	5	5	7	6	7	8	..	..	3	3	1	..	45	43
6·02. Statutory Indians—																															
(a) Hindus	..	..	1	1	..	..	1	1	2	2	1	1	1	1	..	..	..	..	3	3	..	..	1	1	..	..	10	10
(b) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	1	2
(c) Anglo-Indians	1	1	1	1	1	1	..	..	1	1	3	3	3	3	1	1	..	..	1	..	..	..	2	2	1	1	15	14
(d) Other classes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1
(e) Total	1	1	2	2	1	1	1	1	3	3	4	4	4	4	2	3	1	1	4	3	..	..	3	3	1	1	27	27
6·03. GRAND TOTAL	2	1	8	8	2	2	7	7	4	4	6	6	9	9	7	8	8	7	11	11	..	..	6	6	2	1	72	70
7. Other Departments—																															
7·01. Europeans	11	11	23	22	9	9	26*	24	11	11	3*	2	53	50	17	17	22	20	4	7	1	1	13	13	25*	30	218*	217
7·02. Statutory Indians—																															
(a) Hindus	5	5	5	7	1	2	2	2	2	2	8	10	15	17	4	4	3	3	20	22	2	2	5	7	6	16	78	99
(b) Muslims	..	..	..	..	..	..	..	..	..	..	1	1	3	2	..	..	..	..	1	1	..	..	..	..	1	2	6	6
(c) Anglo-Indians	1	1	2	2	..	..	1*	2	..	..	2*	3	11	13	5	2	3	3	..	..	..	..	..	..	6*	6	31*	32
(d) Other classes	..	..	..	..	..	..	6	6	..	..	..	..	..	1	2	2	2	2	1	4	..	..	..	..	1	1	12	16
(e) Total	6	6	7	9	1	2	9*	10	2	2	11*	14	29	33	11	8	8	8	22	27	2	2	5	7	14*	25	127*	153
7·03. GRAND TOTAL	17	17	30	31	10	11	35	34	13	13	14*	16	82	83	28	25	30	28	26	34	3	3	18	20	39*	55	345*	370

* Revised figures.

APPENDIX F—contd.

Statement of Gazetted Officers and Officers of corresponding rank employed on Class I Railways, Railway Board and other Railway Offices (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on the 1st April 1929 as compared with 1st April 1928—concld.

Item.	A. B.		B. N.		B. & N.-W.		B., B. & C. I.		Burma.		E. B.		E. I.		G. I. P.		M. & S. M.		N. W.		R. & K.		S. I.		Ry. Board and Miscellaneous officers.		Total.	
	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
8. *Total*—																												
8·01. Europeans	52	50	158*	154	64	63	148*	139	105*	104	86*	79	213	211	190	191	125	117	185*	181	11	11	102	94	70*	75	1,504*	1,469
8·02. Statutory Indians—																												
(*a*) Hindus	10	11	35	38	5	6	22*	24	7	10	36*	36	74	65	28	30	29	25	84	93	2	2	42*	43	8	20	382*	403
(*b*) Muslims	4	5	5	5	..	..	3*	3	1	1	5	7	17	16	4	5	1	..	21	23	1	1	2	3	2	4	66*	73
(*c*) Anglo-Indians	7	9	16	18	1	2	14*	13	11*	12	16	14	56	48	14	10	9	8	24	21	..	..	5	5	9*	9	182	169
(*d*) Other classes	1	1	2	2	..	..	13*	13	6	8	5	5	7	8	10	9	3	3	12	14	..	..	2*	4	1	2	62	69
(*e*) Total	22	26	58	63	6	8	52*	53	25*	31	62*	62	154	137	56	54	42	36	141	151	3	3	51	55	20*	35	692*	714
8·03. Grand total	74	76	216*	217	70	71	195*	192	130*	135	148*	141	367	348	246	245	167	153	326*	332	14	14	153	149	90*	110	2,196*	2,183
9. *Increase + Decrease*—																												
9·01. Europeans	..	−2	..	−4	..	−1	..	−4	..	−1	..	−7	..	−2	..	+1	..	−8	..	−4	..	..	..	−8	..	+5	..	−35
9·02. Statutory Indians—																												
(*a*) Hindus	..	+1	..	+3	..	+1	..	+2	..	+3	..	..	..	−9	..	+2	..	−4	..	+9	..	..	..	+1	..	+12	..	+21
(*b*) Muslims	..	+1	..	..	..	..	..	..	..	..	..	+2	..	−1	..	+1	..	−1	..	+2	..	..	..	+1	..	+2	..	+7
(*c*) Anglo-Indians	..	+2	..	+2	..	+1	..	−1	..	+1	..	−2	..	−8	..	−4	..	−1	..	−3	..	..	..	..	..	..	..	−13
(*d*) Other classes	..	..	..	..	..	..	..	..	..	+2	..	..	..	+1	..	−1	..	..	..	+2	..	..	..	+2	..	+1	..	+7
(*e*) Total	..	+4	..	+5	..	+2	..	+1	..	+6	..	..	..	−17	..	−2	..	−6	..	+10	..	..	..	+4	..	+15	..	+22
9·03. Grand total	..	+2	..	+1	..	+1	..	−3	..	+5	..	−7	..	−19	..	−1	..	−14	..	+6	..	..	..	−4	..	+20	..	−13
10. *Percentage of total*—																												
10·01. Europeans	70·2	65·8	73·2	71·0	91·4	88·7	73·3	72·4	80·7	77·0	58·1	56·0	58·0	60·6	77·2	78·0	74·8	76·5	56·7	54·5	78·6	78·6	66·7	63·1	77·8	68·2	68·5	67·3
10·02. Statutory Indians—																												
(*a*) Hindus	14·9	14·5	16·2	17·5	7·2	8·5	11·3	12·5	5·4	7·4	24·3	25·5	20·2	18·7	11·4	12·2	17·4	16·3	25·8	28·0	14·3	14·3	28·1	28·9	8·9	18·2	17·4	18·5
(*b*) Muslims	5·4	6·6	2·3	2·3	..	..	1·5	1·6	0·8	0·8	3·4	5·0	4·6	4·6	1·6	2·0	0·6	..	6·4	6·9	7·1	7·1	1·3	2·0	2·2	3·6	3·0	3·3
(*c*) Anglo-Indians	9·5	11·8	7·4	8·3	1·4	2·8	7·2	6·8	8·5	8·9	10·8	9·9	15·3	13·8	5·7	4·1	5·4	5·2	7·4	6·4	..	..	3·3	3·3	10·0	8·2	8·3	7·7
(*d*) Other classes	..	1·3	0·9	0·9	..	..	6·7	6·7	4·6	5·9	3·4	3·6	1·9	2·3	4·1	3·7	1·8	2·0	3·7	4·3	..	..	0·6	2·7	1·1	1·8	2·8	3·2

* Revised figures.

APPENDIX F—contd.

Statement of Subordinates, drawing Rs. 250 per mensem and over or on scales of pay rising to Rs. 250 per mensem and over, employed on Class I Railways, Railway Board and other Railway Offices (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on 1st April 1929 as compared with 1st April 1928.

Item.	A. B.		B. N.		B. & N. W.		B., B. & C. I.		Burma.		E. B		E. I.		G. I. P.		M. & S. M.		N. W.		R. & K.		S. I.		Total.	
	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. *Agency Department*—																										
1-01. Europeans	..	..	..	..	..	..	..	..	..	..	3	3	3	4	1	3	..	..	..	1	..	..	..	..	7	11
1-02. Statutory Indians—																										
(a) Hindus	3	2	4	4	1	1	4	4	5	5	8	8	13	15	2	2	3	3	7	9	1	1	4	3	55	57
(b) Muslims	..	..	..	..	..	..	3	3	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	3	4
(c) Anglo-Indians	1	1	2	2	1	1	2	3	4	4	..	..	..	..	4	1	1	1	3	3	..	..	1	2	19	18
(d) Other classes	..	..	..	..	..	..	6	7	2	2	..	..	..	1	4	4	..	..	2	..	..	..	..	..	14	14
(e) Total	4	3	6	6	2	2	15	17	11	11	8	8	13	17	10	7	4	4	12	12	1	1	5	5	91	93
1-03. Grand total	4	3	6	6	2	2	15	17	11	11	11	11	16	21	11	10	4	4	12	13	1	1	5	5	98	104
2. *Engineering Department*—																										
2-01. Europeans	1	1	11	12	2	2	12	10	..	1	8	8	58	62	26	36	13	11	37*	43	2	2	5*	4	176	193
2-02. Statutory Indians—																										
(a) Hindus	7*	9	65	65	4	6	71	71	50*	55	37	40	140	147	98	87	12	14	158*	160	..	..	29	37	671	691
(b) Muslims	2	3	6	4	3	3	12	10	5*	3	5	4	10	10	25	23	1	..	82*	87	1	1	2	3	154*	151
(c) Anglo-Indians	4	4	51	48	17	17	12	11	32	35	29	30	118	118	58	50	25	23	52*	42	1	1	24*	17	423*	396
(d) Other classes	1*	2	..	2	..	..	28	31	16*	15	4	4	2	..	28	27	2	1	13	35	..	..	3	3	96*	120
(e) Total	14	18	122	119	24	26	123	123	103	108	75	78	270	275	209	187	40	38	304*	324	2	2	58*	60	1,344*	1,358
2-03. Grand total	15	19	133	131	26	28	135	133	103	109	83	86	328	337	235	223	53	49	341*	367	5	5	63	64	1,520*	1,551
3. *Transportation*—																										
3-01. Europeans	1*	1	21	20	9	9	39	39	6	7	30	30	107	126	213	203	..	..	131*	123	Included under commercial.		11	8	568	566
3-02. Statutory Indians—																										
(a) Hindus	5*	6	33	33	2	3	94	102	10	17	27	33	47	55	41	25	2	3	48*	51			11	16	320	344
(b) Muslims	..	..	5	6	1	1	8	8	2	2	2	2	12	11	6	8	..	..	16	16			1	1	53	55
(c) Anglo-Indians	14*	14	69	70	4	4	36	44	83	81	57	61	188	189	508	527	29	28	85	98			18	23	1,091*	1,139
(d) Other classes	1	1	2	3	..	..	52	111	10	12	5	3	3	5	68	55	..	..	32	32			..	1	173	223
(e) Total	20	21	109	112	7	8	190	265	105	112	91	99	250	260	623	615	31	31	181*	197			30	41	1,637*	1,761
3-03. Grand total	21*	22	130	132	16	17	229	304	111	119	121	129	357	386	836	818	31	31	312*	320			41	49	2,205*	2,327

*Revised figures.

APPENDIX F—concld.

Statement of Subordinates, drawing Rs. 250 per mensem and over or on scales of pay rising to Rs. 250 per mensem and over, employed on Class I Railways, Railway Board and other Railway Offices (excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways) on 1st April 1929 as compared with 1st April 1928—concld.

Item.	A. B.		B. N.		B. & N. W.		B., B. & C. I.		Burma.		E. B.		E. I.		G. I. P.		M. & S. M.		N. W.		R. & K.		S. I.		Total.	
	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
4. *Commercial*—																										
4·01. Europeans	..	..	Included under Transportation.		2	2	Included under Transportation.						10	6	6	8	Included under Transportation.		12	7	..	..	1	1	31	24
4·02. Statutory Indians—																										
(*a*) Hindus	1	1			..	..							30	26	27	30			14*	16	..	..	4	5	76*	78
(*b*) Muslims	..	..			..	..							5	5	4	4			3	5	..	..	..	..	12	14
(*c*) Anglo-Indians	..	..			..	..							10	9	13	11			3	9	7	7	..	..	33	36
(*d*) Other classes	..	..			..	..							..	..	8	10			2	1	..	..	..	..	10	11
(*e*) Total	1	1			..	..							45	40	52	55			22*	31	7	7	4	5	131*	139
4·03. Grand total	1	1			2	2							55	46	58	63			34*	38	7	7	5	6	162*	163
5. *Mechanical Engineering*—																										
5·01. Europeans	17	17	255	208	14	13	75	70	13	16	66	65	326	320	53	54	60	69	106*	191	4	3	34	33	1,083*	1,059
5·02. Statutory Indians—																										
(*a*) Hindus	3	3	13	16	..	..	27	27	9	6	17	21	47	90	20	20	6	6	58*	57	1	1	5	5	206*	252
(*b*) Muslims	1	1	2	2	1	1	5	6	1	..	1	1	7	13	1	2	1	1	37*	46	..	..	..	..	57*	73
(*c*) Anglo-Indians	16	17	179	177	18	19	295	285	113	124	78	86	602	601	129	119	96	90	198*	177	3	3	126	134	1,853*	1,832
(*d*) Other classes	6	4	4	7	..	..	44	46	12	18	1	1	4	8	28	30	6	8	29*	57	1	1	1	2	136*	182
(*e*) Total	26	25	198	202	19	20	371	364	135	148	97	109	660	712	178	171	109	105	322*	337	5	5	132	141	2,252*	2,339
5·03. Grand total	43	42	453	410	33	33	446	434	148	164	163	174	986	1,032	231	225	169	174	488*	528	9	8	166	174	3,335*	3,398
6. *Stores Department*—																										
6·01. Europeans	..	..	..	..	..	..	3	3	..	..	..	..	6	7	1	4	..	..	8	6	..	..	..	..	18	20
6·02. Statutory Indians—																										
(*a*) Hindus	1	1	8	8	..	..	6	7	3	5	6	7	15	13	2	2	1	1	23	22	..	..	2	3	67	69
(*b*) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	5	6	..	..	..	..	5	8
(*c*) Anglo-Indians	1	1	10	11	1	1	3	2	..	..	5	7	14	26	8	1	5	5	6	7	..	..	3	3	56	64
(*d*) Other classes	..	..	1	1	..	..	3	3	..	..	..	..	..	..	1	3	..	..	3	5	..	..	..	..	8	12
(*e*) Total	2	2	19	20	1	1	12	12	3	5	11	14	29	41	11	6	6	6	37	40	..	..	5	6	136	153
6·03. Grand total	2	2	19	20	1	1	15	15	3	5	11	14	35	48	12	10	6	6	45	46	..	..	5	6	154	173

7. Other Departments—																										
7·01. Europeans	4	4	30	33	3	2	20*	19	..	..	1	..	84	90	5	4	2	2	8	16	..	..	1	2	158*	172
7·02. Statutory Indians—																										
(a) Hindus	7	7	48	48	6	6	57*	59	21	21	46	49	127	118	27	24	12	13	66	81	2	2	20	19	439*	447
(b) Muslims	..	..	..	..	..	..	2	2	5	6	1	2	9	10	..	..	..	..	19*	22	..	..	..	..	36*	42
(c) Anglo-Indians	4	4	69	70	18	18	33*	35	16	16	19	15	77	77	22	23	20	19	9*	8	1	1	4	6	292	292
(d) Other classes	..	..	2	2	1	1	26	25	11	11	1	..	1	2	20	20	7	7	15	17	..	..	3	3	87	89
(e) Total	11	11	119	120	25	25	118*	121	53	54	67	66	214	207	69	67	39	39	109	128	3	3	27	28	854*	869
7·03. GRAND TOTAL	15	15	149	153	28	27	138*	140	53	54	68	66	298	297	74	71	41	41	117	144	3	3	28	30	1,012*	1,041
8. Railway Board and other Railway offices—																										
8·01. Europeans	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	6
8·02. Statutory Indians—																										
(a) Hindus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87*	130
(b) Muslims	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	13
(c) Anglo-Indians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17*	23
(d) Other classes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12*	12
(e) Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	126*	178
8·03. GRAND TOTAL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	131*	184
9. Total—																										
9·01. Europeans	23*	23	317	273	30	28	149	141	19	24	108	106	594	615	305	312	75	82	362*	337	7	6	52*	48	2,046*	2,051
9·02. Statutory Indians—																										
(a) Hindus	27	29	171	174	13	16	259	270	98*	109	141	158	419	464	217	190	36	40	374*	396	4	4	75	88	1,921*	2,068
(b) Muslims	3	4	13	12	5	5	30	29	13*	11	9	9	43	52	36	37	2	1	162*	182	1	1	3	4	330*	360
(c) Anglo-Indians	40*	41	380	378	59	60	381	380	248	260	188	199	1,009	1,020	742	732	176	166	356*	344	12	12	176*	185	3,784*	3,800
(d) Other classes	8*	7	9	15	1	1	159	223	51*	58	11	8	10	16	157	149	15	16	95*	147	1	1	7	9	526*	662
(e) Total	78	81	573	579	78	82	829	902	410	438	349	374	1,481	1,552	1,152	1,108	229	223	987*	1,069	18	18	261*	286	6,571*	6,890
9·03. GRAND TOTAL	101*	104	890	852	108	110	978	1,043	429	462	457	480	2,075	2,167	1,457	1,420	304	305	1,349*	1,456	25	24	313	334	8,617*	8,941
10. Increase + Decrease—																										
10·01. Europeans	..	..	..	—44	..	—2	..	—8	..	+5	..	—2	..	+21	..	+7	..	+7	..	+25	..	—1	..	—4	..	+5
10·02. Statutory Indians—																										
(a) Hindus	..	+2	..	+3	..	+3	..	+11	..	+11	..	+17	..	+45	..	—27	..	+4	..	+22	..	..	..	+13	..	+147
(b) Muslims	..	+1	..	—1	..	..	..	—1	..	—2	..	..	..	+9	..	+1	..	—1	..	+20	..	..	..	+1	..	+30
(c) Anglo-Indians	..	+1	..	—2	..	+1	..	—1	..	+12	..	+11	..	+11	..	—10	..	—10	..	—12	..	..	..	+9	..	+16
(d) Other classes	..	—1	..	+6	..	..	..	+64	..	+7	..	—3	..	+6	..	—8	..	+1	..	+52	..	..	..	+2	..	+126
(e) Total	..	+3	..	+6	..	+4	..	+73	..	+28	..	+25	..	+71	..	—44	..	—6	..	+82	..	..	..	+25	..	+319
10·03. GRAND TOTAL	..	+3	..	—38	..	+2	..	+65	..	+33	..	+23	..	+92	..	—37	..	+1	..	+107	..	—1	..	+21	..	+324
11. Percentage of total—																										
11·01. Europeans	22·7	22·1	35·6	32·0	27·8	25·5	15·2	13·5	4·4	5·2	23·6	22·1	28·6	28·4	20·9	22·0	24·7	26·9	26·8	26·6	28·0	25·0	16·6	14·4	23·8	23·0
11·02. Statutory Indians—																										
(a) Hindus	26·8	27·9	19·2	20·4	12·1	14·5	26·4	25·9	22·9	23·6	30·9	32·9	20·2	21·4	14·9	13·4	11·8	13·1	27·7	27·2	16·0	16·7	24·0	26·3	22·3	23·1
(b) Muslims	3·0	3·9	1·5	1·4	4·6	4·5	3·1	2·8	3·0	2·4	2·0	1·8	2·1	2·4	2·5	2·6	0·7	0·3	12·0	12·5	4·0	4·2	1·0	1·2	3·8	4·0
(c) Anglo-Indians	39·6	39·4	42·7	44·4	54·6	54·5	39·0	36·4	57·8	56·3	41·1	41·5	48·6	47·1	50·9	51·5	57·9	54·4	26·4	23·6	48·0	50·0	56·2	55·4	43·9	42·5
(d) Other classes	7·9	6·7	1·0	1·8	0·9	0·9	16·3	21·4	11·9	12·5	2·4	1·7	0·5	0·7	10·8	10·5	4·9	3	7·1	10·1	4·0	4·1	2·2	2·7	6·2	7·4

* Revised figures.

APPENDIX G.

Statement showing the number of appointments created and vacancies which occurred among officers of Gazetted rank on State Railways and of corresponding rank on Companies' Railways (Class I) excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways, and how they were filled during 1928-29.

Departments.	Number of new appointments created during the year.	Number of appointments abolished during the year.	Number of vacancies which occurred during the year.	Number of vacancies which occurred in previous years not filled in these years remaining to be filled.	Number of net vacancies to be filled.	Number of vacancies not filled up during the year.	Number of vacancies actually filled.	FILLED BY					
								Europeans.	STATUTORY INDIANS.				
									Hindus	Muslims.	Anglo-Indians.	Other classes.	TOTAL.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
State Worked Railways.													
1. Agency	..	2	..	2	..	..	..	..	..	..	..	..	..
2. Engineering	12	..	18	6	36	25	11	4	3	1	3	..	7
3. Transportation and Commercial.	1	..	18	8	27	22	5	2	1	..	2	..	3
4. Mechanical	22	..	9	5	36	18	18	16	1	..	1	..	2
5. Stores	2	1	..	2	3	1	2	2	..	..	..	..	..
6. Other Departments	13	..	5	2	20	7	13	1	9	..	2	1	12
7. TOTAL 1928-29	50	3	50	25	122	73	49	25	14	1	8	1	24
7. TOTAL 1927-28	56	..	38	27	121	25	96	44	30	3	16	3	52
8. Percentage of Europeans to number of vacancies filled. 1927-28	45·8												
8. Percentage of Europeans to number of vacancies filled. 1928-29	51·0												
9. Percentage of Statutory Indians to number of vacancies filled. 1927-28	54·2												
9. Percentage of Statutory Indians to number of vacancies filled. 1928-29	49·0												
Other Railways.													
Assam Bengal Railway.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	1	2	2	..	1	..	1	1	..	..	..	..	..
3. Transportation and Commercial.	..	..	1	2	3	1	2	..	1	..	1	..	2
4. Mechanical	1	..	..	..	1	..	1	1	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	1	..	1	..	1	..	1	..	..	..	1
7. TOTAL 1928-29	2	2	4	2	6	1	5	2	2	..	1	..	3
7. TOTAL 1927-28	1	1	(a) 8	2	(a) 10	2	(a) 8	3	2	1	(a) 2	..	(a) 5
8. Percentage of Europeans to number of vacancies filled. 1927-28	37·5												
8. Percentage of Europeans to number of vacancies filled. 1928-29	40·0												
9. Percentage of Statutory Indians to number of vacancies filled. 1927-28	62·5												
9. Percentage of Statutory Indians to number of vacancies filled. 1928-29	60·0												
Bengal and North-Western Railway.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	1	..	1	..	2	..	2	1	..	..	1	..	1
3. Transportation and Commercial.	..	..	..	..	..	..	..	..	..	..	..	..	..
4. Mechanical	..	..	1	..	1	..	1	1	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	1	..	1	..	1	1	..	..	..	..	..
7. TOTAL 1928-29	1	..	3	..	4	..	4	3	..	..	1	..	1
7. TOTAL 1927-28	1	..	..	1	2	..	2	1	..	..	1	..	1
8. Percentage of Europeans to number of vacancies filled. 1927-28	50·0	..											
8. Percentage of Europeans to number of vacancies filled. 1928-29	75·0	..											
9. Percentage of Statutory Indians to number of vacancies filled. 1927-28	50·0	..											
9. Percentage of Statutory Indians to number of vacancies filled. 1928-29	25·0	..											

(a) Revised figures.

Digitized with financial assistance from Government of Maharashtra on 01 February, 2020

APPENDIX G—*contd.*

Statement showing the number of appointments created and vacancies which occurred among officers of Gazetted rank on State Railways and of corresponding rank on Companies' Railways (Class I) excluding H. E. H. the Nizam's Guaranteed State and Jodhpur Railways, and how they were filled during 1928-29—contd.

Departments.	Number of new appointments created during the year.	Number of appointments abolished during the year.	Number of vacancies which occurred during the year.	Number of vacancies which occurred in previous years not filled in these years remaining to be filled.	Number of net vacancies to be filled.	Number of vacancies not filled up during the year.	Number of vacancies actually filled.	FILLED BY					
								Europeans.	STATUTORY INDIANS.				
									Hindus.	Muslims.	Anglo-Indians.	Other classes.	TOTAL.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Bengal Nagpur Railway.													
1. Agency	1	..	..	..	1	..	1	1	..	..	..	..	..
2. Engineering	4	1	4	..	7	..	7	3	1	..	3	..	4
3. Transportation and Commercial.	..	..	4	..	4	2	2	1	..	1	..	..	1
4. Mechanical	1	..	3	3	7	2	5	4	1	..	..	..	1
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	2	..	3	2	7	3	4	1	2	..	1	..	3
7. TOTAL (1928-29)	8	1	14	5	26	7	19	10	4	1	4	..	9
7. TOTAL (1927-28)	16	4	16	4	32	(a) 5	(a) 27	13	(a) 7	..	5	2	(a) 14
8. Percentage of Europeans to number of vacancies filled. (1927-28)	48·1	..	..	..	..	..	..	..	..	..	..	..	..
8. Percentage of Europeans to number of vacancies filled. (1928-29)	52·6	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1927-28)	51·9	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1928-29)	47·4	..	..	..	..	..	..	..	..	..	..	..	..
Bombay, Baroda and Central India Railway.													
1. Agency	2	..	..	..	2	1	1	1	..	..	..	..	..
2. Engineering	1	6	12	2	9	5	4	1	3	..	..	..	3
3. Transportation and Commercial.	..	..	1	3	4	2	2	1	1	..	..	..	1
4. Mechanical	2	1	1	..	2	..	2	2	..	..	..	..	..
5. Stores	1	..	..	..	1	1	..	..	..	..	..	..	..
6. Other Departments	1	1	4	..	4	1	3	2	..	..	1	..	1
7. TOTAL (1928-29)	7	8	18	5	22	10	12	7	4	..	1	..	5
7. TOTAL (1927-28)	1	7	14	8	16	7	9	5	..	2	1	1	4
8. Percentage of Europeans to number of vacancies filled. (1927-28)	55·6	..	..	..	..	..	..	..	..	..	..	..	..
8. Percentage of Europeans to number of vacancies filled. (1928-29)	58·3	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1927-28)	44·4	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1928-29)	41·7	..	..	..	..	..	..	..	..	..	..	..	..
Burma Railways.													
1. Agency	..	..	..	..	..	..	..	..	..	..	..	..	..
2. Engineering	1	1	6	1	7	4	3	1	1	1	..	..	2
3. Transportation and Commercial.	..	..	1	5	6	1	5	2	..	..	..	3	3
4. Mechanical	1	..	1	..	2	..	2	2	..	..	..	..	..
5. Stores	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Other Departments	..	..	..	..	..	..	..	..	..	..	..	..	..
7. TOTAL (1928-29)	2	1	8	6	15	5	10	5	1	1	..	3	5
7. TOTAL (1927-28)	9	..	5	8	22	6	16	11	3	..	2	..	5
8. Percentage of Europeans to number of vacancies filled. (1927-28)	68·8	..	..	..	..	..	..	..	..	..	..	..	..
8. Percentage of Europeans to number of vacancies filled. (1928-29)	50·0	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1927-28)	31·2	..	..	..	..	..	..	..	..	..	..	..	..
9. Percentage of Statutory Indians to number of vacancies filled. (1928-29)	50·0	..	..	..	..	..	..	..	..	..	..	..	..

(a) Revised figures.